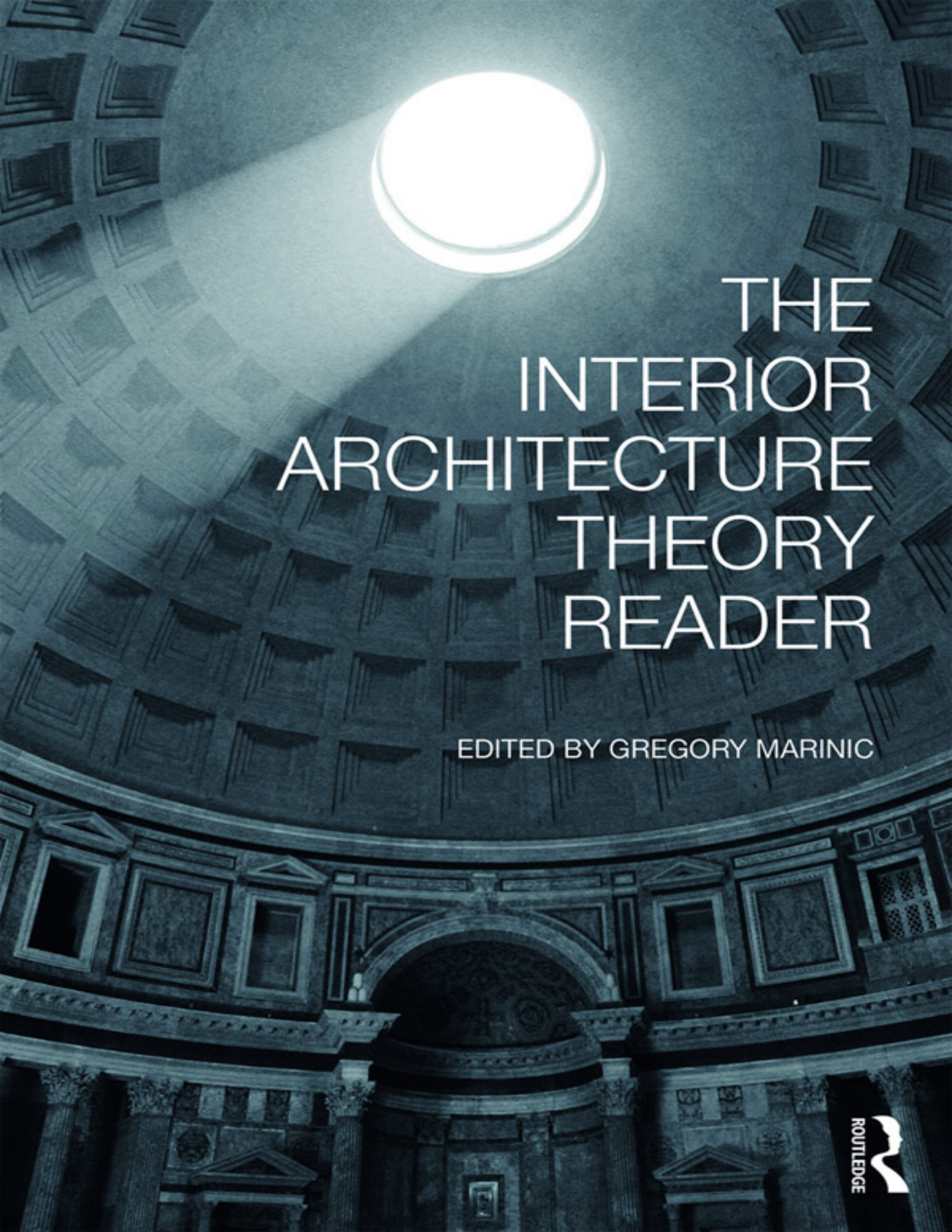

THE INTERIOR ARCHITECTURE THEORY READER

EDITED BY GREGORY MARINIC

ROUTLEDGE

The Interior Architecture Theory Reader

The Interior Architecture Theory Reader presents a global compilation that collectively and specifically defines interior architecture. Diverse views and comparative resources for interior architecture students, educators, scholars, and practitioners are needed to develop a proper canon for this young discipline. As a theoretical survey of interior architecture, the book examines theory, history, and production to embrace a full range of interior identities in architecture, interior design, digital fabrication, and spatial installation. Authored by leading educators, theorists, and practitioners, fifty chapters refine and expand the discourse surrounding interior architecture.

Gregory Marinic, PhD, is a designer, theorist, scholar, and educator whose research and practice are focused on the intersection of architecture, interiority, obsolescence, adaptive reuse, and geography. His New York-based multidisciplinary design practice, Arquipelago, has been awarded by the Seoul Metropolitan Government, American Institute of Architects, and the Association of Collegiate Schools of Architecture; as well as exhibited in the AIA Center for Architecture in New York, Estonian Architecture Museum in Tallinn, Seoul Dongdaemun Design Plaza, TSMD Architecture Center in Ankara, National Building Museum in Washington, D. C., and elsewhere. His critical essays have been published in *AD Journal, Journal of Architectural Education, Design Issues, Journal of Interior Design, AIA Forward Journal, International Journal of Architectural Research, and IntAR Journal of Interventions and Adaptive Reuse.* Dr. Marinic is an associate

professor at the University of Kentucky College of Design and Director of Graduate Studies in the School of Interiors. He previously served as founding director of the Interior Architecture program at the University of Houston College of Architecture and Design.

The Interior Architecture Theory Reader

Edited by
Gregory Marinic

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For Tito, Xavier, and Giovanni

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Contributors

Volkan Alkanoglu is the founding principal of Volkan Alkanoglu Design. He is a registered architect with the Architektenkammer in Germany and a LEED Accredited Professional in the United States. His work has been exhibited at international institutions and featured in international design publications. Alkanoglu taught at the Georgia Institute of Technology after having served as Director of Professional Studies. He previously served as the TVS Design Distinguished Critic at Georgia Tech and held a faculty position at the Southern California Institute of Architecture in Los Angeles.

Jonathon R. Anderson is an assistant professor of interior design at Ryerson University in Toronto. His research explores how industrial manufacturing and CNC technologies influence the design and making processes. His work is characterized by innovative and explorative methods that result in interconnected design, fine art, and technology solutions. From this nontraditional process emerges a provocative, complex design language that visually communicates at various scales by emphasizing corporeal and phenomenological experiences. Anderson holds a Master of Fine Arts in Furniture Design from Savannah College of Art and Design and a BS in Architecture from Southern Illinois University.

Markus Berger is an associate professor and the graduate program director in the Department of Interior Architecture at the Rhode Island School of Design. He holds a Diplomingenieur für Architektur from the Technische Universität Wien, Austria, and is a registered architect (SBA) in the Netherlands. Prior to coming to the United States, he practiced as an artist and architect; taught in Austria, India, and Pakistan; and worked with UN

Studio in the Netherlands. He co-founded and serves as co-editor of *Int|AR Journal of Interventions and Adaptive Reuse*, an interdisciplinary publication that encompasses issues of preservation, conservation, alteration, and intervention. The work in his research, writing, and InsideOut Design studio focuses on change and design interventions in the built environment.

Caryn Brause is an assistant professor and the graduate program director in the Department of Architecture at the University of Massachusetts, Amherst. She is a registered architect, a member of the American Institute of Architects, and principal of SITELAB Architecture + Design. Her practice explores the reuse of abundant resources, including existing building stock, underutilized landscapes, and repurposed materials. Her design work for EcoBuilding Bargains, the largest material reuse store in New England, won a 2013 AIA New England Citation Award. Her teaching investigates critical skills for contemporary practice, both technological and interpersonal. Brause received a 2016 AIA/ACSA Practice + Leadership Award and a 2013 NCARB Award for her project "Voices from the Field: From Design Concept to Reality," which spans design, materials, methods, and professional practice. She is author of The Designer's Field Guide to Collaboration, published by Routledge in 2017.

Graeme Brooker is the head of interiors at The Royal College of Art, London. He has published widely on many aspects of the interior, in particular, the reuse of existing buildings. His recent publications include *Adaptations* (2016) and *Key Interiors Since 1900* (2013). He has co-edited (with Sally Stone) seven books on the interior including the highly acclaimed *Re-readings* (2005). He edited (with Lois Weinthal) *The Handbook of Interior Architecture + Design* (2013). Brooker is a member of the editorial advisory board of the journals *Interiors: Design/Architecture/Culture* (Taylor & Francis) and *IDEA Journal*. He is the series editor of *Designing Interiors* for Lund Humphreys. He is the founder and director of Interior Educators (IE), the national association for interior education in the United Kingdom.

Kirsten Brown is a New York–based design scholar and museum studies specialist who focuses on developing emerging ways to engage audiences and their communities with the evolving museum environment and the role of museums in contemporary society. She holds an MA in Museum Studies and a CAS in Cultural Heritage Preservation from the Syracuse University School of Design. She has curated, co-curated, and contributed to exhibitions at the National Steinbeck Center, the Everson Museum of Art, and Syracuse University Art Gallery. Brown served as content coordinator and copy editor for *The Interior Architecture Theory Reader*.

Blaine Brownell is an associate professor and the director of graduate studies at the University of Minnesota School of Architecture and principal of the design and research practice Transstudio. Brownell authored the *Transmaterial* series, as well as the books *Matter in the Floating World* and *Material Strategies* with Princeton Architectural Press. He writes the "Mind & Matter" column for *Architect* magazine. Considered a preeminent scholar on advanced materials for architecture and design, Brownell has been published in over forty design, business, and science journals including *The New York Times, The London Times, The Wall Street Journal, New Scientist*, and *Discover*. He has lectured widely in the Americas, Europe, and Asia. Brownell's latest book, with co-author Marc Swackhamer, is titled *Hypernatural: Architecture's New Relationship with Nature*.

Amy Campos is an associate professor at California College of the Arts. Her work focuses on critical issues of durability and design with a special interest in the impermanent, migratory potentials of the interior. Her work spans a variety of scales and platforms from urban and architectural to interiors, object, and furniture design. Campos' book, Interiors Beyond Architecture, is co-edited with Deborah Schneiderman and published by Routledge in 2018. Her essays include "Interior Migrations," published in the *International Journal of Interior Architecture + Spatial Design* (2013), and "Optimistic Projections on the Cultures of Mass Consumption and Waste: Embracing Hygiene Paranoia, Product Addiction, and Nomadic Lifestyles in

Sustainable Building Design," published in the journal *Forward* (2011). Her work has been discussed in the book *Architecture Live Projects: Pedagogy into Practice* (2014). Recent press includes *Interior Design, Dwell, Contract, Icon, Perspective*, and *Architecture Australia* magazines.

Rachel Carley is discipline leader of Spatial Design at AUT University. She holds a PhD in Architecture from the University of Auckland. Her thesis, Whiteread's Soundings of Architecture, constructs a series of contours between British artist Rachel Whiteread's sculptures and broader architectural discourse. Soundings are taken in order to explore the complex ways in which the artist enlists architectural drawing and modelling practices to shed light on the frequently overlooked yet rich interior lives of quotidian spaces and typological structures. Current post-doctoral research critically examines the use of constraint as a pedagogical tool in the interior design studio.

Erin Carraher is an assistant professor at the University of Utah School of Architecture, where she coordinates the pre-major and junior-level studios, and is a senior researcher at the Integrated Technology in Architecture Center (ITAC). She is a licensed architect who practiced in New York before moving into academia full time. Her current research focuses on emergent models of collaborative practice, which she applies in academic and professional projects. Carraher has won several regional and national honors, including the ACSA Diversity Achievement Award, ACSA Collaborative Practice Award, AIA Utah Young Architect Award, and Building Technology Educators' Society Emerging Faculty Award. She is the co-author of *Forefront: Architects as Leaders in Collaborative* Practice (2016).

Sarah Deyong, PhD, is an associate professor at the Texas A&M University College of Architecture and Coordinator of the PhD track in History, Theory, and Design. She writes on the history of ideas in architecture, with a focus on postwar and contemporary topics. With grants from the Graham Foundation and the Glasscock Center of the Humanities, Deyong has

published her research in venues such as the *Journal of Architectural Education, Journal of the Society of Architectural Historians, Praxis, Journal of Architecture, A Critical History of Contemporary Architecture* (Ashgate), and the MoMA exhibition catalogue, *The Changing of the Avant-Garde*. She garnered the ACSA/JAE Best Scholarship of Design Award in 2015 and is currently working on two books: *The Reinvention of Modern Architecture at Mid-Century* and *Five Steps Toward a Critical Architecture*. Deyong received her PhD at Princeton University and her Bachelor of Architecture at the University of Toronto.

Lorella Di Cintio, PhD, is an associate professor at Ryerson University School of Interior Design in Toronto. Her research agenda focuses primarily on design activism and the social and political positions undertaken by designers and design educators. She is the founder of *The Design Activism = Change Initiative*. In 2014, she guest edited *Design Activism: Developing Models, Modes, and Methodologies of Practice* for *IDEA Journal*. In 2014, she was awarded the IDEC Community Service Award from the Interior Design Educators Council. In 2015, Professor Di Cintio won the Equity, Diversity, and Inclusion Award at Ryerson University.

Georgina Downey, PhD, is a visiting research fellow in Art History at the University of Adelaide. Her PhD research in the School of Art, Architecture, and Design at the University of South Australia focused on the work of expatriate Australian woman artists in Paris during the modern period. She has published widely on the domestic interior in art, which was awarded an Australian Academy of the Humanities Travel Grant (2006) and University of Adelaide research grants. Her most recent books include *Domestic Interiors: Representing Home from the Victorians to the Moderns* (2013), which won the AAANZ Anthology of the Year Award (2014), and *Designing the French Interior: The Modern Home and Mass Media* (2015) with Anca Lasc and Mark Taylor. She is a member of the Art Association of Australia and New Zealand, Museums Australia, and the networks of the Centre for Studies of Home, and Edwardian Culture.

Ursula Emery McClure is the A. Hays Town professor and graduate coordinator in the School of Architecture at Louisiana State University. Emery McClure is a registered architect, member of the American Institute of Architects, and a fellow of the American Academy in Rome. She is a founding partner of emery*mcclure* architecture whose work and writing have been published widely in venues including *Places, 306090–05, Architecture Record Online, Journal of Architectural Education*, *Dwell*, and *Southern Living*. The practice has won numerous awards, including recognition by the Venice Biennale (2006 and 2010) and AIA, and was awarded the Rome Prize in Architecture (2008).

David Erdman is the chair of Graduate Architecture and Urban Design (GAUD) at Pratt Institute. He is a co-founding director of the award-winning design firm davidclovers (davidclovers changed ownership and since 2016 is plusClover), which has been listed among *Architectural Digest*'s AD100 list of top architecture and design firms in Asia. The practice has exhibited work at the Venice Biennale, Beijing Biennale, Hong Kong/Shenzhen Biennale, Art Institute of Chicago, M+ Hong Kong, and the Southern California Institute of Architecture. Erdman is a co-founder of *servo*, a design collaborative whose work has been shown at the Centre Pompidou, MoMA, and the Cooper-Hewitt Smithsonian Design Museum. Erdman received the Design Vanguard Award, Young Architects Award with *servo*, and the Rome Prize from The American Academy in Rome (2008–2009).

Laura Garófalo-Khan in an associate professor in the University at Buffalo School of Architecture and Planning. Her research focuses on the role of architecture as an active environmental steward, hierologically centered buildings, and ecocentric architectural ceramic systems. She has received design awards for 13th International Garden Festival/Jardins de Métis, Charleston Transit Hub Competition by Architecture for Humanity, and the What if? New York City Post-Disaster Housing Competition. Her practice, co-founded with Omar Khan, was selected by the Architectural League of

New York as Notable Young Architects. Garófalo-Khan has been published in *Matter: Material Processes in Architectural Production* and *Vegetecture*. Her work has been exhibited at multiple venues, including the Architectural League of New York and the National Building Museum.

Nataly Gattegno and **Jason Kelly Johnson** are founding partners of Future Cities Lab, an interdisciplinary design and research collaborative that has developed a range of award-winning projects exploring the intersection of design with advanced fabrication technologies, responsive building systems, and public space. FCL's work has been widely published and exhibited most recently at the Yerba Buena Center for the Arts and the San Francisco Museum of Modern Art. Prior to teaching architecture at the California College of the Arts, Gattegno and Johnson taught at the University of Michigan, UC Berkeley, University of Pennsylvania, and University of Virginia.

Tasoulla Hadjiyanni, PhD, is a professor in the Interior Design program of the University of Minnesota. A native of Cyprus, she holds a Bachelor of Architecture and Master of Science in Urban Development and Management from Carnegie Mellon University and a PhD from the University of Minnesota. Her doctoral work in Housing Studies at the University of Minnesota, presented in her book *The Making of a Refugee – Children Adopting Refugee Identity in Cyprus* (Praeger, 2002), began her interdisciplinary scholarship on the role of design in the construction of culture, identity, marginalization, and difference. Hadjiyanni's research findings and teaching pedagogies have appeared in journals including *Space and Culture, Home Cultures, Journal of Interior Design, Design Studies*, and the *International Journal of Consumer Studies*. She served as editor of *EDRA Connections* and guest editor of a special issue on Design+Culture for the *Journal of Interior Design*.

Dorita Hannah, PhD, explores the intersection between performance and architecture and publishes on practices that negotiate the spatial, visual, and

performing arts. Her design work incorporates scenography, exhibition, installation design, and theater architecture. Focusing on 'event-space', she investigates how the built environment housing an event is itself an event and driver of experience. An active contributor to the Prague Quadrennial (PQ) and World Stage Design (WSD), Hannah sits on several international editorial and executive boards. Her publications include *Performance Design*, as well as the guest editorship of journals themed on performance/architecture and sceno-architecture. She is currently completing a book for publication by Routledge titled *Event-Space: Theatre Architecture and the Historical Avant-Garde*.

Susan Hedges is senior lecturer in Spatial Design in the School of Art and Design, Auckland University of Technology, New Zealand. Her research and publication interests embrace an interest for architectural drawing, interior architecture, notation, dance, film, and critical theory regarding drawing and visual culture. These seemingly divergent fields are connected by an interest in the relationship that exists between the body condition, surface, pattern, architectural notation, and visual images.

Edward Hollis studied architecture at Cambridge and Edinburgh universities. For the subsequent six years, he practiced with Geoffrey Bawa in Sri Lanka and Richard Murphy in Edinburgh. In 1999, he began teaching interior architecture at Napier University in Edinburgh. In 2004, he joined the Edinburgh College of Art where he serves as director of research in the School of Design. Working with follies and ruins in Sri Lanka, modern interventions to historic buildings in Scotland, and within the slippery discipline of interiors, his research focuses on time, storytelling, and building. Hollis is author of the book *The Secret Lives of Buildings* (2010) and *The Memory Palace: A Book of Lost Interiors* (2013).

Frank Jacobus is a registered architect and faculty member in the Fay Jones School of Architecture at the University of Arkansas. After graduating from The Cooper Union for the Advancement of Science and Art in 1998, he

earned a post-professional master's degree in Architecture with a Design-Theory focus from the University of Texas at Austin in 2007. His research centers on the impacts of emerging technologies on architectural practice and production. His work has been exhibited and published widely in conference proceedings and journals. Jacobus is the author of *Archi-Graphic: An Infographic Look at Architecture* (2015) and *Discovering Architecture: Built Form as Cultural Reflection* (2014).

Jodi La Coe is an architect currently pursuing a PhD in Architecture and Design Research at Virginia Tech. She earned a Bachelor of Architecture from Penn State and a Master of Architecture from McGill University in the History and Theory of Architecture program. In 2008, she was awarded the New Faculty Teaching Award by the Association of Collegiate Schools of Architecture and American Institute for Architecture Students. She publishes on architectural representation and design, including "Memento Mori and the Primacy of Recollection in Architectural Meaning" (*Int/AR Journal of Interventions and Adaptive Reuse*, 2013), "Building the Imagination" (NCBDS 30, 2014), *Design Guide for the Borough of State College, Pennsylvania* (2014), and *Perimeter Protection Streetscape Handbook* (2014).

Jodi Larson is a historian of American culture and politics educated at Tufts University and the University of Minnesota, Twin Cities. Her writing on politics and culture includes "American Tune: Postwar Campaign Songs in a Changing Nation" (*Journal of Popular Culture*, 2009) and "The Story of the Suburbs" (*Anoka County Historical Society*, 2011). Her exhibit design work includes historical, arts, and theatrical exhibitions at local and regional museums and art centers. She designs curriculum, teaches, and lectures in museums and historical societies, including Space Center Houston, the Minnesota Historical Society, and the National Park Service.

Zeke Leonard is an assistant professor in the Syracuse University School of Design, member of the Environmental and Interior Design faculty, and coordinator of the first-year curriculum. His research involves the role of

social responsibility and environmental stewardship in contextually relevant design and fabrication practices. Zeke partners with community groups and organizations to find ways to mobilize local resources toward better uses. He previously taught at the Rhode Island School of Design and New York University, and is a visiting instructor at institutions including the Haystack Mountain School of Craft and the Arrowmont School of Arts and Crafts. Zeke holds an MFA in Furniture Design from the Rhode Island School of Design and a BFA in Set Design from the University of North Carolina School of the Arts.

Laura Lovell-Anderson, PhD, specializes in design for sustainability and industrial design. Her research interests are an amalgam of systems theory, biomimicry, and applied science to advocate for sustainable development. Lovell-Anderson holds bachelor and master degrees in industrial and sustainable design from Savannah College of Art and Design, an MS in Law from Wake Forest University, and a PhD in Design (Sustainability + Energy Technology concentration) from North Carolina State University.

Rafael Luna is an adjunct professor at the Rhode Island School of Design. He is principal and co-founder of Boston-based PRAUD, a practice focused on studying topology and typology in architecture and urbanism. Luna's work has been published and exhibited internationally and recognized with the Architectural League Prize. His current teaching focuses on hybrid architecture as an adaptive reuse programming strategy for interior urbanism. His most recent essay on interior architecture, "Life of a Shell and the Collective Memory of a City," is featured in *Int/AR Journal of Interventions and Adaptive Reuse*.

Marian Macken, PhD, is a senior lecturer in the School of Architecture and Planning at the University of Auckland, New Zealand. Her research examines temporal aspects of architecture and the role of artists' books as documentation of architecture, with particular interest in the implications and possibilities for architectural drawing and exhibition as design outcome.

Her most recent writing has been published in *IDEA Journal, Architecture & Culture*, and *The Routledge Companion to Design Research*. Her work has been acquired by various international public collections of artists' books, including Tate Britain, the Victoria and Albert Museum, and Urawa Art Museum, Japan. Marian was awarded a PhD, by thesis and creative work, from the University of Sydney in 2012.

Marc Manack is an assistant professor of Building Design at the UNC Charlotte School of Architecture, and founding principal of the architecture and design practice SILO AR+D. His professional design work and creative practice have been recognized nationally and internationally by design awards, publications, and exhibitions. In 2016, Manack was selected as an Emerging Voice by the Architectural League of New York. He taught previously at the University of Arkansas Fay Jones School of Architecture, Kent State University's College of Architecture and Environmental Design, and at Ohio State University's Knowlton School of Architecture. Manack is co-editor of the book Out of Scale (2015).

Gregory Marinic, PhD, is an associate professor in the University of Kentucky College of Design and the director of graduate studies in the School of Interiors. Marinic is a designer, theorist, scholar, and educator whose research and practice are focused on the intersection of architecture, interiority, obsolescence, adaptive reuse, and geography. His New York–based architectural practice, Arquipelago, has been awarded by the Seoul Metropolitan Government, Association of Collegiate Schools of Architecture, and the American Institute of Architects; as well as exhibited in the AIA Center for Architecture in New York, Estonian Architecture Museum in Tallinn, Dongdaemun Design Plaza in Seoul, and the National Building Museum in Washington, DC. His recent publications include *AD Journal, Journal of Architectural Education, Design Issues, International Journal of Architectural Research, Journal of Interior Design*, and *Int|AR Journal of Interventions and Adaptive Reuse*. Marinic previously served as founding

director of the Interior Architecture program at the University of Houston College of Architecture and Design.

Anne Massey, PhD, is a visiting tutor at Regents University, London. She is an internationally renowned scholar, educator, and author best known for her work on the Independent Group, including The Independent Group: Modernism and Mass Culture in Britain, 1945–59 (1996) and numerous contributions to exhibition catalogues, journals, and edited collections. Massey is founding editor (with John Turpin) of the academic journal Interiors: Design/Architecture/Culture and has written extensively on the subject, starting with Interior Design of the Twentieth Century first published in 1990. Her most recent publications include Pop Art & Design, edited with Alex Seago (2017) and The Blackwell Companion to Contemporary Design Since 1945 (2018).

Michael A. McClure is a professor of Architecture and associate dean of the College of the Arts at the University of Louisiana at Lafayette. McClure is a registered architect, member of the American Institute of Architects, and a fellow of the American Academy in Rome. He is a founding partner of emery*mcclure* architecture whose work and writing have been published widely in venues including *Places, 306090–05, Architecture Record Online, Journal of Architectural Education, Dwell*, and *Southern Living*. The practice has won numerous awards, including recognition by the Venice Biennale (2006 and 2010) and AIA, and was awarded the Rome Prize in Architecture (2008).

Pablo Meninato, PhD, is a practicing architect and adjunct professor of Architecture at Temple University. He holds a PhD from the Universidade Federal do Rio Grande do Sul in Porto Alegre, Brazil; a Diploma of Architect from the University of Belgrano at Buenos Aires, and a Master of Architecture from the University of Pennsylvania. Meninato has taught and practiced architecture and urban design in Buenos Aires, Monterrey, and Philadelphia. He is principal of Philadelphia-based PM Arch. His design

work and essays have been widely published in magazines and journals in the United States, Argentina, and Brazil. His most recent book Unexpected Affinities: The Concept of Type in Architectural Project from Quatremère to Duchamp (2018) examines the correspondences among notions of architectural type, object, displacement, and readymade.

Anthony Morey is a Miami-born and Los Angeles–based designer, writer, and artist and the co-founder of One-Night Stand LA. He is interested in the rifts between the subconscious and conscious tensions in the creative arts and the various tendencies within them. Morey graduated with distinction from the Southern California Institute of Architecture (SCI-Arc) with a Bachelor of Architecture. He was granted the Alpha Rho Chi medal and a thesis award. His work has been exhibited in Miami, Paris, Sydney, New York, and Los Angeles and featured in several publications. Morey is currently a research graduate student at the Harvard Graduate School of Design.

Clay Odom is an assistant professor in the Interior Design program at the University of Texas School of Architecture. He is a graduate of the Texas Tech University College of Architecture and the Columbia University Graduate School of Architecture Planning and Preservation. Odom has completed building and interiors projects across the United States and previously worked for internationally renowned firms including SHoP Architects and Studio Sofield. Odom is principal of StudioMODO, an Austin-based, research-focused design office. His work leverages a background that is both academic and practice-oriented, supporting a speculative platform for his design-based scholarship at the UTSOA.

Clare Olsen is an assistant professor of architecture at Cal Poly San Luis Obispo. A dedicated educator, Olsen previously taught at Tulane University, Cornell University, and Syracuse University. She is a licensed architect and has pursued installation and furniture design projects through her practice, C.O.CO. Her semi-permanent installations, *PROJECTions* and *Reflection*, are

located on the Syracuse University and Cal Poly campuses. Olsen's recent research is focused on interdisciplinarity, computation, materials, and design pedagogy. Her book, *Collaborations in Architecture and Engineering* (Routledge, 2014), co-authored with engineer Sinead MacNamara, has received international acclaim.

Ziad Qureshi is an assistant professor in the College of Architecture and Design at the University of Houston where he teaches interior architecture studios and seminars on the history and theory of design. His current research and work focus on the architecture and urbanism of transnational geographies, spatial obsolescence, interior adaptive reuse, and post-industrial landscapes. He is co-editor of the *International Journal of Interior Architecture and Spatial Design* and coordinator of the Advanced Spatial Design Research Group. His recent publications include the essay "Rural Post-Industrial Landscapes: The Perceptual Practice of the Generative Site Plan" (2015), the exhibition "Apocalyptic Architecture: Designing within Resilient Detroit" (University of Edinburgh, 2013), and the book chapter "The Museum" in *Discovering Architecture: Built Form as Cultural Reflection* (2014).

Blair Satterfield and **Marc Swackhamer** are co-founding principals of HouMinn Practice. Satterfield is an assistant professor of architecture at the University of British Columbia and director of UBC SALA-based HiLo Lab. Swackhamer is a professor of architecture at the University of Minnesota where he serves as head of the School of Architecture. HouMinn is a design collaborative that studies the relationship between performance, ornament, and applied tool-making through the lenses of digital production and fabrication technologies. Their work has been extensively published and internationally exhibited. HouMinn's research has garnered such honors as the 2014 and 2008 R&D Award from *Architect* magazine and the "Best in Environments" award from *ID* magazine. Satterfield holds degrees from the University of Illinois at Urbana-Champaign and Rice University.

Swackhamer received degrees from the University of Cincinnati and Rice University.

Deborah Schneiderman is a professor of Interior Design at Pratt Institute and a registered architect. She is principal and founder of deSc: architecture/design/research, a Brooklyn-based research practice. Schneiderman's scholarship and teaching explore the emerging fabricated interior environment and its materiality. Her research has been widely published and includes the books *Inside Prefab: the Ready-Made Interior* (2012); *The Prefab Bathroom: An Architectural History* (2014), an architectural graphic novel–style history (illustrated by Bishakh Som); and the edited volumes *Textile, Technology and Design: From Interior Space to Outer Space* (co-edited with Alexa Griffith Winton, 2016) and *Interiors Beyond Architecture* (co-edited with Amy Campos, Routledge, 2018). She has published several book chapters in edited volumes, including *The Handbook of Design for Sustainability* (2013), as well as articles in academic journals including *Interiors: Design/Architecture/Culture, Journal of Interior Design, and Home Cultures.*

Ross T. Smith, PhD, is an associate professor of Architectural Design at Xi'an Jiaotong Liverpool University in Suzhou, China. His teaching and research focus on architecture design studio with theoretical concerns of phenomenology, embodiment, material culture, and experiential learning. Smith is a photographic artist who has been exhibiting internationally for over twenty years. His practice enhances the poetic and cross-disciplinary influences he cultivates in studio teaching. Smith's research has been published in *IDEA Journal, Charrette, Journal of the Association of Architectural Educators, The Cambridge Architecture Journal*, and two edited books, *Live/Work* and *Sub Rosa*, featuring work from students in the Master of Architecture design studios at the University of Melbourne.

Jan Smitheram is a senior lecturer in the School of Architecture at Victoria University of Wellington. She has taught both theory and design courses at

undergraduate and postgraduate levels. Her teaching and research engage the relationship between the body and space at different scales and how space can prompt or regulate the body. Recent publications include a co-edited book (with Jules Moloney and Simon Twose) *Architectural Design Research* (Spurbuch, 2015) and a chapter (with Jules Moloney and Simon Twose) in *Studio Futures* (Uro, 2015). Her published essays include "Regulation and Transformation: A Content Analysis of the Representation of Women in Architecture New Zealand, 1998–2008" in *Architectural Theory Review* (2012) and "Affective Territories" (with Ian Woodcock) in *IDEA Journal* (2009).

Jonathan D. Solomon is a researcher with a long interest in the role of architecture in the contemporary city. His book, *Cities Without Ground* (2012), explores the unique three-dimensional urbanism of Hong Kong. He has edited the series 306090 books for over a decade and served as curator of the United States Pavilion at the 2010 Venice Architecture Biennale. Solomon is the director of Architecture, Interior Architecture, and Designed Objects at the School of the Art Institute of Chicago. He holds a BA from Columbia University and a Master of Architecture from Princeton University. Solomon is a licensed architect in the State of Illinois.

Ro Spankie is a principal lecturer and course leader for Interior Architecture at the University of Westminster. Fascinated by the role of drawing in the design process, she has exhibited and published work related to the interior both in the UK and abroad. Recent publications include Basics Interiors 03: Drawing Out the Interior (2009), "Drawing Out the Censors Room" (2012), "The Art of Borrowing" in The Handbook of Interior Architecture and Design (2013), and An Anecdotal Guide to Sigmund Freud's Desk (2015). She is associate editor of the international journal: Interiors: Design, Architecture, Culture (Taylor & Francis).

Emily Stokes-Rees, PhD, is an assistant professor of museum studies in the Syracuse University School of Design. She is a material anthropologist

whose research centers on evolving ideas around cultural citizenship and representation in postcolonial Asia. After receiving a doctorate from Oxford University in 2007, Stokes-Rees spent two years as a postdoctoral fellow at Brown University, where she spent much of her time hidden away in the collections of the Haffenreffer Museum of Anthropology. From 2012 to 2014, she was based at Harvard as an academic dean at Cabot House and lecturer in the anthropology department. Her recent publications include *Making Sense of a Mélange: Representing Cultural Citizenship in Singapore's Asian Civilizations Museum* (2013), "Getting Everyone to Think with Things: New Approaches to Teaching and Learning in the Haffenreffer Museum of Anthropology, Brown University" in *Academic Museums: Beyond Exhibitions and Education* (2012), and "Recounting History: Constructing a National Narrative in the Hong Kong Museum of History" in *National Museums: New Studies from Around the World* (Routledge, 2011).

Mark Taylor, PhD, is a professor of Architecture at Swinburne University, Australia. His research on the interior has been widely published in journals and books, and he has taught both theory and design studio courses. He has held several nationally competitive grants and currently holds an Australian Research Council Discovery Grant to investigate Place and Parametricism. Taylor co-edited (with Julieanna Preston) the seminal publication Intimus: Interior Design Theory Reader (2006), edited the four-volume anthology Interior Design and Architecture: Critical and Primary Sources (2013), and more recently, with Georgina Downey and Anca Lasc, co-edited Designing the French Interior: The Modern Home and Mass Media (2015).

Liz Teston is an assistant professor of interior architecture at the University of Tennessee School of Interior Architecture. She teaches courses that focus on community engagement, design theory, and design communication. Teston has presented her research on conditions of interiority, design politics, and the everyday at several conferences and symposia. Teston was recently named the College of Architecture and Design's James Johnson Dudley Faculty Scholar and will be a Fulbright Scholar in Bucharest,

Romania, in 2018. She was co-editor for Jennifer Bonner's A Guide to the Dirty South: Atlanta (2013). Her most recent publications are a visual essay "Reclaim the City" in the International Journal of Interior Architecture + Spatial Design and "… And Though She be but Little, She is Fierce!" in MONU #27 Small Urbanism (2017).

Sarah Treadwell is an associate professor in the School of Architecture and Planning at The University of Auckland. Her research investigates the representation of architecture in colonial and contemporary images and proceeds with both writing and image-making. Treadwell has a long-standing interest in gender-related issues in architecture and has written on the work of contemporary artists and on representations of motels, suburbs, interiority, and volcanic conditions of ground. She has published in various books and journals, including *Space and Culture, Architectural Theory Review*, and *Interstices*. Her visual work addressing oceanic conditions has been exhibited at Te Tuhi, Pakuranga; the Gus Fisher Gallery, University of Auckland; and the Adam Art Gallery – Te Pa¯taka Toi in Wellington, New Zealand.

Marco Vanucci Marco Vanucci is the founding director of OPENSYSTEMS Architecture, an architecture and design practice based in London. His work has been exhibited internationally and it was featured in several international design publications. He has taken part in several conferences and symposia and has lectured worldwide. Vanucci taught architectural technology at KTH in Stockholm and is currently Unit Master at the Architectural Association School of Architecture in London.

Johan Voordouw is an assistant professor at the Azrieli School of Architecture and Urbanism at Carleton University and a registered architect (ARB, UK). He has taught and practiced in the United Kingdom, Canada, and the Netherlands. Johan completed his graduate studies at the Bartlett School of Architecture (Unit 20) and his undergraduate degree at the University of Manitoba. Currently, his research interests are digital design

and emerging fabrication. More specifically, his work seeks to reconfigure digital practice with historic/vernacular knowledge in developing new architectural hybrids. This research extends from the initial stages of architectural representation through the design process to construction.

Michael Webb studied architecture at the Regent Street Polytechnic School of Architecture. In 1963, he was invited by Peter Cook to join a group of young architects who referred to themselves as Archigram. Using a magazine format, Archigram promoted a radical rethinking of the concept of architecture using inflatable structures, clothing-like environments, bright colors, and cartoon-like drawing techniques that pioneered contemporary graphic visualization and technological trends. Since moving to United States in 1965, Webb has taught architecture at the Rhode Island School of Design, Columbia University, Barnard College, Cooper Union, New Jersey Institute of Technology, University at Buffalo, Virginia Tech, Pratt Institute, and Princeton University. Webb currently teaches at the Cooper Union in New York. His work has been internationally acclaimed, extensively published, and broadly exhibited.

Lois Weinthal is the chair of the School of Interior Design at Ryerson University in Toronto. Her research and practice investigate the interrelationship of architecture, interiors, clothing, and objects, resulting in works that take on an experimental nature. Weinthal has internationally exhibited and lectured. Publications include *Toward a New Interior: An Anthology of Interior Design Theory* (2011) and *After Taste: Expanded Practice in Interior Design*, co-edited with Kent Kleinman and Joanna Merwood-Salisbury (2011). She has received grants from the Graham Foundation, Fulbright, and DAAD. Weinthal previously taught at The University of Texas at Austin and Parsons The New School for Design. She studied architecture at Cranbrook Academy of Art and the Rhode Island School of Design.

Simon Weir, PhD, is a lecturer in Architecture at the University of Sydney. His theoretical research focuses on Salvador Dali's theories of Surrealism, Classical art and architecture from the Athenian and Roman eras, and the foundational mythologies of architectural culture. His writing on interiors range from deployments of Surrealist methods in "Paranoiac Critical Interiorisations: Odysseus in Mies van der Rohe's Seagram Building and Buckminster Fuller's Domes," in *IDEA Journal* (2012), and "On the Edibility of Theatres," in *Youtopia – A Passion for the Dark* (2012), to an exploration of the political significance of domestic interior ornamentation in "Xenia in Vitruvius' Greek House: andron, ξείνία and xenia from Homer to Augustus," in *The Journal of Architecture*.

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Introduction

Interior architecture began to gain recognition in the 1970s as an independent discipline shaped primarily by the architectural principles, histories, and theories surrounding spatial design. Today, the increasing relevance of interior architecture responds to widespread misunderstandings of interior design – a broad territory ranging from architectural interiors to stylistic considerations – as well as new scholarship that bridges boundaries. Some of this discourse reframes the interior as within the realm of architecture, rather than apart from it, by focusing on the overlooked interiors of architecture. Although "interiority" undeniably exists at the core of interior design, the "interior" in architecture seems to live at the periphery. Embodying a trans-territorial lens that fits neither entirely within architecture nor interior design, advocates of interior architecture must continually negotiate and promote awareness within established frameworks that are at times unknowingly biased, ill-fitting, and unresponsive. At the same time, contemporary modes of theorizing, practicing, teaching, and disseminating spatial scholarship have grown increasingly demanding, blurry – and at times – contentious.

In response to such issues, interior architecture has grown into a specialization focusing primarily on the architectural provenance of interiors advanced by adaptation, performance, technology, and social agency. Contrasted to the largely autonomous field of interior design and its historical association with the decorative arts, interior architecture represents a notable shift in spatial practice and the academy. Merging aspects of architecture, interior design, adaptive reuse, installation art, and digital fabrication – interior architecture blends these influences into a

sophisticated interrogation of conventions critiqued through alternative practices. *The Interior Architecture Theory Reader* promotes such awareness while offering an impetus for emerging interiorities and the future queries that will examine them. In this book, the nomenclature *interior architecture* frames a specifically architectural lens on interiors advanced through intersectional practices. The talents of architects, interior architects, interior designers, industrial designers, installation artists, and academics converge to shape new frameworks for interdisciplinary reassessment. Reflecting on the past while pondering emerging potentialities for spatial design, leading educators, historians, and theorists investigate speculative themes to define interior architecture.

Although connected to and respectful of both architecture and interior design, this book embodies one of the few resources identifying interior architecture as a specific discipline with a unique call to action. Chapters authored by leading voices in the field respond to concerns that the interior specificities of architecture must be more effectively examined and rigorously theorized. Here, authors ponder how students, scholars, educators, and practitioners of interior architecture might shape a unique canon for this young discipline. They survey a diverse range of global insights that collectively construct a defined territory for interior architecture. To achieve this, *The Interior Architecture Theory Reader* has been catalogued into nine thematic areas – "Histories," "Territories," "Spatialities," "Sensorialities," "Temporalities," "Materialities," "Occupancies," "Appropriations," and "Geographies" – that have been further delineated by individual chapters.

In "Histories," authors examine how the interior has been a contentious territory of conflicting interpretations, intentions, and desires. Marginalized by the larger discipline of architecture throughout the twentieth century, interior design grew incrementally as an allied and complex yet distinct field with roots in the decorative arts. As such, interior practitioners were often generally viewed as tastemakers who primarily embraced intuition and style. During the formative years, spatial designers of various identities collectively contributed to an emerging territory that

later developed into interior architecture. Chapters examine conflicting claims to the interior alongside deeper investigations into the architectural foundations of interiority.

In "Territories," authors engage the cultural, urban, and disciplinary boundaries of interior architecture. As our most populous and desirable cities become more dense, and base-building opportunities increasingly rare, contemporary designers have embraced higher performance through adaptive interventions. Shifting scales, interior practitioners have developed a greater awareness of complex projects focused on experimentation in digital fabrication and materials research that interrogates contemporary conventions. Expanding on such considerations, authors in "Spatialities" examine how interiority operates within highly variant existing conditions to re-semanticize buildings as a consequence of dynamic processes. Contingency enhances the need for designers to view their craft as an opportunity for stewardship. Like a form of urban acupuncture, small-scale interior manipulations contribute to broader ecologies within established urban forms and existing buildings.

In "Sensorialities," authors explore the emotive parameters of interiors in scholarship that explores the sensory conditions of color, sound, light, mood, and atmosphere. Authors present installations, performance-based architectures, robotics, and material innovations addressing a broad range of theory-based interior architectural investigations connected to the senses. In a similar manner, authors in "Temporalities" consider phenomenology and processes of change in building interiors and occupancies. Spatial installations, performances, and light-mobile architectures offer a critical view across scales. Mobilizing a transdisciplinary platform supporting provocative innovations, spatial temporality exists at the intersection of conservation and ecologies at various scales. These chapters advocate for critical design practices that appropriate and renew.

In "Materialities," authors reconsider the role of materials and their agency in the process of making, as well as the social, ethical, and aesthetic presence of materiality in interior architecture. Guided by bold

ideas and supported by experimentation, interior architecture offers a natural home for materials research, while contributing to and advancing the challenges that confront the larger practice of architecture. The investigative and speculative nature of innovative interior architecture curriculum allows us to rethink the stereotypical conventions associated with interiors-related practice and conventions of interior design. Chapters in this section address various material conditions from the standpoint of historical influences and current technologies. Durability, weathering, resilience, and sustainability are reconsidered via materiality.

In "Occupancies," authors address inhabitation. What do we gain – ethically, socially, politically, environmentally, and otherwise – by framing interiority as the *most* opportunistic territory to address social justice? Topics range in scope from the human body to conditions at the urban scale. Here, the human body serves as a generative force for interiors – its representation and contextualization are discussed with regard to individual and communal occupancies. Furthermore, a transnational context considers occupancies from cultural to national perspectives, gender, politics, and territorialization.

Similarly, chapters in "Appropriations" analyze changing needs and expectations for building interiors, as well as outside forces that subject their contents to continual reassessment. Interiors frame human occupancies and address economic, social, and political needs. As encapsulated worlds, interior spaces speak to the undeniably humanist nature of architecture – evoking the interconnected agencies of both time and place, while conveying compelling aspects of who we were, who we are, and who we want to be. They transmit our personal desires, collective anxieties, collective aspirations – revealing temporality and ephemeral qualities that physically document cultural values and impermanence. More specifically, interior architecture privileges the phenomenological parameters of design by emphasizing time and inhabitation. Chapters in this section engage cultural practices, gender identities, and political influences transmitted substantively and expansively at various scales within the built environment.

In “Geographies,” authors discuss cultural themes and globalization lensed via shifting imperatives of interiority. The relationship of interiors to diminishing resources, sociopolitical change, and advancing technologies has placed transformative demands on both academia and professional practice. Responding to the need for sustainable alternatives, a new discourse recasts existing buildings and their interiors as an increasingly critical territory. Tethering interior architecture to adaptive reuse commits the practice to a sustainable dimension nurturing alternative futures. Rapid urbanization, environmental imperatives, natural disasters, and continuing inequities between nations require enlightened design solutions – at the scale of the interior – which have become increasingly central in contemporary practice. These concerns assume the need to create flexible organizational structures and collaborative models, repositioning interiors discourse at a global scale. Confronting issues of resilience, adaptive practices engage more responsive and regenerative actions in the larger built environment. Building interiors, and specifically the repurposed potential of existing and undervalued buildings, systematize a bottom-up framework for rebuilding cities from the inside out.

Together, the topical themes and fifty chapter-essays of *The Interior Architecture Theory Reader* curate a transnational perspective on interiority that encourages experimentation and debate. Revealing multiplicity and continuity, singularity and variance – stewarding a social and technological dimension nurturing progressive futures – this book celebrates a non-hierarchical and inclusive discourse surrounding the field. As a designer, theorist, scholar, educator, and advocate of interior architecture, I am often asked, “What is interior architecture?” Shaped by a diverse range of global voices, *The Interior Architecture Theory Reader* represents my collaborative attempt to answer that question.

Part one

Histories

Chapter 1

(Re)constructing histories

A brief historiography of interior architecture

Edward Hollis

I began my academic career in 1999 as a lecturer in what was, at the time, a relatively new subject: interior architecture. There was little for students, or for me, to read about interior architecture. The only comprehensive work of which I knew was John Kurtich's *Interior Architecture* published in 1995. Since that time, however, there has been something of a publishing explosion around the subject.[1]

This chapter critiques some of this literature and charts the theorization of the subject since the late 1990s. In addition to Kurtich's foundational text, this chapter discusses John Pile's *History of Interior Design* (2000), Graeme Brooker and Sally Stone's *Re-readings* (2004), Fred Scott's *On Altering Architecture* (2008), Penny Sparke's *The Modern Interior* (2008), and Charles Rice's *The Emergence of the Interior* (2007).[2] Not all of these books are explicitly about interior architecture. Scott, Brooker, and Stone, for example, addressed an audience of architects and interior designers (*Re-readings* being published by RIBA). Pile, Rice, and Sparke

focused on interior design and a more academic audience. All of them contributed significantly to discussions surrounding the new discipline. While books by Pile, Sparke, and Rice are strictly histories, Scott offers a theoretical disquisition; Brooker, Stone, and Kurtich deliver compendia of case studies. In each, however, a sense of history informs understandings about what interior architecture was, is, and could become.

How, then, were these histories of interior architecture constructed? What were their roots and precedents? Why were these books written when they were written? What did they conceive themselves as being histories of? What evidence did they use, and how was it welded into narratives? This chapter will specifically address these historical and historicized understandings of the discipline. It provides a lens through which the identity of interior architecture was constructed during this period. It attempts to show how history is not merely the record of things past, but, like interior architecture itself, a (re)construction of preexisting structures.

Why were these books written?

The turn of the twenty-first century was a time when one important aspect of interior architecture – the reuse of existing buildings – emerged in the form of *Grands Projets* like the Tate Modern (Herzog and De Meuron, 2000) and Berlin Reichstag (Norman Foster, 1999) to occupy the center ground in architecture. John Kurtich put it somewhat messianically:

> The emergence of interior architecture as a new profession is an idea whose time has come. It is the link between art, architecture, and interior design. The professionals in this area have created this term to express a humanistic approach toward the completion of interior spaces. This approach, shared by many design professionals, has begun to produce a definition that is distinct from current practice.[3]

Fred Scott was more modest, commenting, "That theory follows in the wake of the expedient."[4] There were, however, other agendas at work. Scott continued:

> This book began from a partisan argument for the contribution of art school designers to be recognized as being valid in the alteration of the built environment as the more celebrated work of architects in making new buildings. It was, in the beginning, an argument against a widely assumed hegemony.[5]

The works under discussion here were not written by architects but by studio teachers in art schools, such as Scott or Graeme Brooker, and theoreticians and historians of design, such as Sparke, Rice, and Pile. There was a political and professional dimension to their efforts. "Designers disdained the elitist architects for their compulsion for purity and maintenance of concept. Architects generally considered designers to be frivolous with no philosophical base of knowledge to guide their work," explained Kurtich, but as Scott hinted, architecture was perceived to have a hegemony that design did not possess.[6]

Graeme Brooker and Sally Stone's *Re-readings* connected the emergence of interior architecture to postmodernism, though not the stylistic postmodernism of the 1980s. "The rise in the number of buildings being remodeled, and the gradual acceptance and respectability of the practice, is based on the reaction to what is perceived as the detrimental erosion of the city and its contents by modern architecture."[7] The very title of their book suggested a nod to literary postmodernism. "Many examples of modernist architecture," they wrote, "were the product of a formal system that was essentially self-sufficient," while the alteration of buildings offered opportunities to explore the aesthetics of the incomplete, the incoherent, and the layered.[8] Books about interior architecture arose, their authors claimed, in response to three main stimuli: the increasing volume of the practice on the ground, a long-standing political conflict taking place between the

professions of interior design and architecture, and a "second wave" of postmodern practice and theory.

What were these books about?

Having identified the existence of a new practice, Kurtich divided it into three practices:

> First, it can be the entire building designed as an external shell containing integrated and finished interiors. Second, interior architecture can be the completion of space within an existing architectural enclosure. Finally, it can be the preservation, renovation, or adaptive reuse of buildings, historic or otherwise.[9]

His book addressed itself to "architectural masterpieces from various historical periods," including "well known modern examples," and he felt the need to point out, "the examples presented are not limited to interiors."[10]

Pile's history was conceived as a primer – a sort of Pevsner or Bannister Fletcher for interior design. "Professional interior designers," he wrote, "are expected … [to] know the practices of the past in terms of 'styles' … the purpose of this book is to deliver in one volume of reasonable size, a basic survey of 60,000 years of personal and public space."[11] The word *space* is key, for while Pile's history is ostensibly a history of interior design, it takes an architectural approach to its subject:

> interior design is inextricably linked to architecture and can only be studied within an architectural context … Enclosed spaces such as ruins, ancient sites, and open courtyards are given due consideration even though the sky may be their only ceiling and they are, therefore, not strictly interiors[12]

At the same time, references to the other elements that comprise the interior – furniture, textiles, and so on – were limited to edited

highlights.[13]

Penny Sparke contributes to the discussion from a different perspective. Her starting point was Walter Benjamin's famous comment on Paris of the nineteenth century:

> for the private individual, the place of dwelling is for the first time opposed to the place of work. The former constitutes itself as the interior. Its complement is the office. The private individual, who in the office has to deal with reality, needs the domestic interior to sustain him in his illusions.[14]

Sparke continues to suggest that the modern interior has been formed out of the opposition between "two spheres": the domestic interior, characterized by femininity, soft textiles, practices of decoration, and so on, and the public interior, characterized by hard surfaces and materials, male occupations, and architecture. "The boundaries between the 'separate spheres' were fundamentally unstable, and it was that instability, rather than the separation per se, that, I will suggest, defined modernity, and by extension the modern interior." Her history documents episodes in this long-running boundary war: in the domestication of the public spaces of the hotel and café in the nineteenth century, for example, or the victory of the architectural interior in the *Gesamtkunstwerk* homes of the early twentieth century. "Art School" interior design – a sort of soft modernism was, she concluded, a sort of resolution between the two spheres that proved temporary by the current rise of interior architecture.

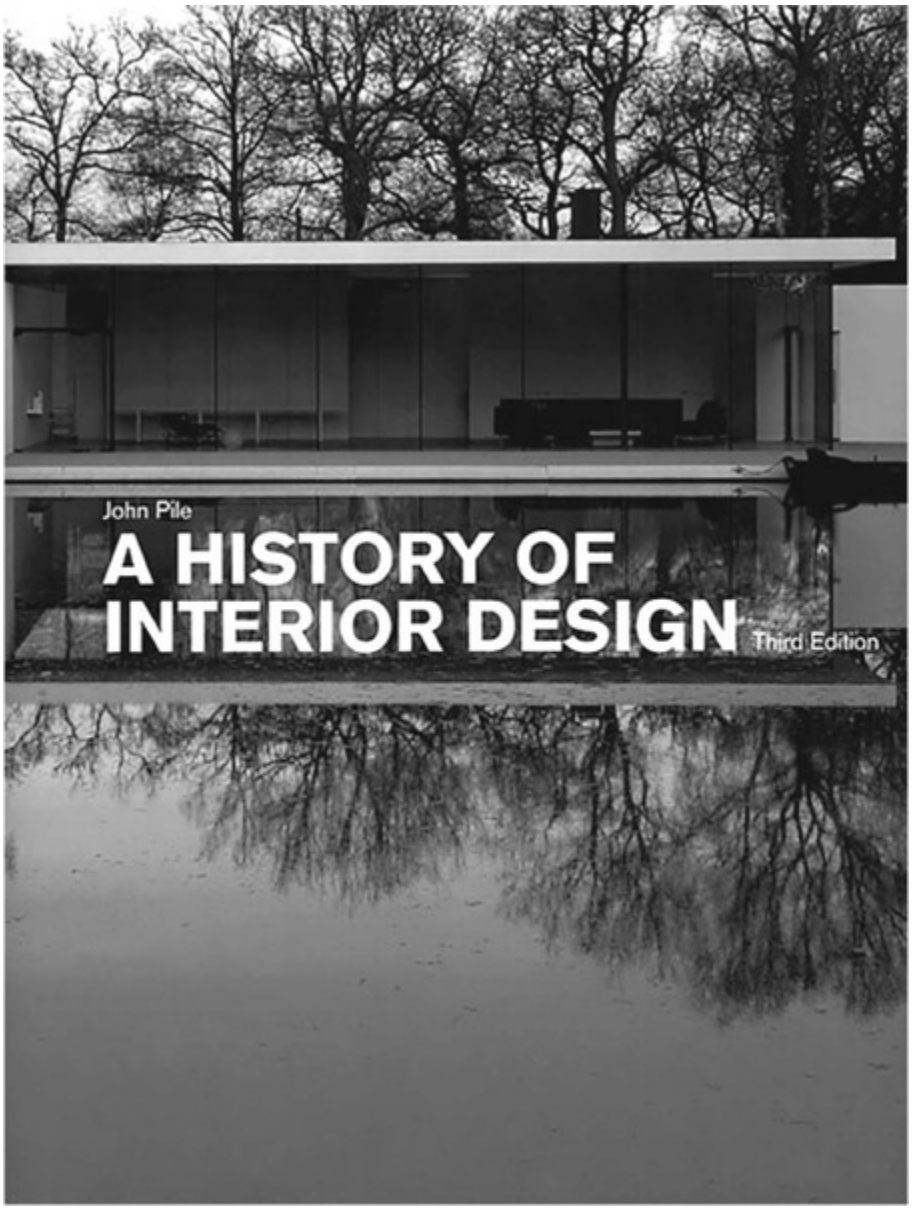

Figure 1.1 The modern interior as architecture: the cover of John Pile's *History of Interior Design* (2009 Edition)

Image credit: Wiley

Figure 1.2 The modern interior as domestic occupation: the cover of Penny Sparke's *The Modern Interior* (2008)

Image credit: Reaktion Books

What evidence did they use?

Sparke identified the interior as an unstable category, and even Pile, whose history of the interior is the most "architectural" discussed here, was forced to admit,

> Interiors do not exist in isolation in the way that a painting or a sculpture does, but within some kind of shell … they are also crammed with a great range of objects and artifacts … this means that interior design is a field with unclear boundaries."[15]

Those boundaries are temporal, as well as spatial. "Interiors," Sparke argued, "are rendered even harder to discuss by the fact that they are constantly being modified as life goes on within them."[16] Sparke was referring to domestic interiors, but the comment has implications for any understanding of the history of interior architecture. An altered building is only ever in a temporary state, destined to be obliterated by history just like the decorative schemes of ephemeral homes. Nevertheless, Pile's history presents interiors as if they possessed such clear boundaries. Interiors are predominantly depicted through photographs, as objects (albeit inside-out ones) largely denuded of that "great range of objects"[17] he mentions in his introduction. The construction of these images is not discussed, as if they were transparent evidence of the interiors depicted.

In *The Emergence of the Interior*, Charles Rice disagreed with this approach: "Visual representations of interiors are not simply transparent to spatial referents, even if such spatial referents exist; representations construct interiors on a two-dimensional surface as much as practices of decoration and furnishing construct interiors spatially."[18] Furthermore, he argued the lens through which such images are constructed is in itself a temporary phenomenon:

> The Oxford English dictionary records the "interior" had come into use from the late fifteenth century to mean inside as divided from outside, and to describe the spiritual and inner nature of the self and the soul. From the early eighteenth century, "interiority" was used to designate interior character and a sense of individual subjectivity, and from the idle of the eighteenth century the interior came to designate the domestic affairs of a state, as well as the territory that belongs to a country or region. It was only from the beginning of the nineteenth century, however, that the interior came to mean "the inside of a building or room."[19]

To compound the problem, the term "interior architecture" itself did not widely come into existence until, as Kurtich wrote, "some progressive design

firms began using the term *interior architecture* in the early 1970s."[20] Historians of the domestic interior addressed this problem by writing histories of a phenomenon created since the "separation of the spheres." In his critique of earlier "traditional" histories, which trace interiors from ancient origins, Rice writes:

> The traditional history … does not subject its conceptual and organizational structures to historical analysis. Each of these histories, in their desire for comprehensiveness, seeks to establish a domain of study wherein one can recognize the continually present themes of privacy and domesticity in relation to the stable categories of the interior and its inhabiting subject. These categories provide reference points against which representations, treated as transparent visual evidence, can be verified to changes in decorative style, and in understanding how the practices of inhabitation can be perceived as timeless, but also progressive.[21]

He might have been referring to Pile's survey, which contains images of Minoan throne rooms, medieval cathedrals, and baroque libraries, none of which were designed by people who would have described themselves as interior designers. In the same way, for example, Kurtich, Brooker, and Stone might write about the ad hoc occupation of the Theater of Marcellus, or Michelangelo's conversion of the Baths of Diocletian into the church of Santa Maria Degli Angeli as "interior architecture," and present them as equivalent to works which, like Foster's Reichstag or Herzog and Meuron's Tate Modern, were conceived in an age in which the term was current. It is unlikely like that rapacious medieval nobility or Michelangelo himself would have agreed.

Rice's own study, like Sparke's, limits itself to that period in which the interior had been, or was being, conceptualized – the nineteenth century. His title addresses itself explicitly to the notion that the very concept of the interior is a time-bound one. This, however, is not necessarily an adequate approach for a historian of interior architecture, which addresses itself not

just to the ephemeral practices of interior occupation, but also the eternal verities of architecture. A comprehensive history of the alteration and occupation of buildings, if it is to be useful in practice, will have to deal with structures and practices that reach back well beyond the birth of "interior architecture" as it is currently conceived.

How did they tell their stories?

The problem of evidence leads us to the issue of narrative structure. Pile's chronological catalogue of masterpieces in terms of "styles" describing "the nature of the contributions of those individuals who generated the most interesting and influential approaches to design"[22] was primarily an authorial vision of both design and the interior. Scott identified two problems with this approach in respect to the practice of altering buildings. The first relates to narrative structure. To illustrate his point, he referred to a classic work of architectural history, Sir John Summerson's *Architecture in Britain 1530–1830*, and to a very well-known building, Hampton Court Palace:

> Firstly, the palace appears as the joint creation of Cardinal Wolsey and King Henry VIII, and secondly, two hundred pages later as the creation of Sir Christopher Wren. The consideration of architectural styles requires this ersatz purity of vision, a perceptual requirement to see buildings as discrete entities and complete unto themselves even when, as is the case with Hampton Court, the whole is a composite affair.[23]

This sets an interesting challenge for the writer of a "survey" of the history of interior architecture, or architectural alteration. If history is to be presented as a sequence of "styles" (as the uses of history by practitioners – and a long tradition – might suggest it should), then what sequence should it follow?

One option is to present such a history as a sequence of individual alterations, in which case, Hampton Court would appear twice, as in Summerson's work. Another would be to adopt a case study model, tracing Hampton Court through the many centuries of its development, which would allow what Brooker and Stone call "the inherent qualities of the place and its surroundings" to emerge through the repeated retellings of a singular place. Any sense of a general or comprehensive history would be lost by this second approach.

Scott also poses another problem, arguing the practice of altering architecture struck at the very heart of authorial aesthetics: "the work of intervention and alteration," he wrote, "is … collective, across generations, whereas the work of architecture may often be considered to be individual."[24] If a building has been redesigned many times over centuries, to whom may we ascribe its authorship, and how? This returns us to the problem of representation, for architecture and the interior are themselves systems of representation, bound up in all those other systems of representation, both literary and visual. Interior architecture exists as much in its own histories as in built artefacts. Should, therefore, the history of interior architecture, like its products, be discontinuous, multiple, layered, and collaborative taking place across generations?

The idea of interior architecture emerged in response to new practices in the building industry and a new iteration of the old professional turf war between interiors and architecture. It also reflected a "postmodern turn" in both architecture and history: an interest in the intertextual, the relative and the denial of linear heroic narratives. The works under discussion here helped to define understandings of interior architecture that ranged from Pile's or Kurtich's conception of the interior as a quasi-architectural artefact, to Brooker and Stone's or Scott's understanding of the practice of alteration – and the consequent incompleteness of the interior as an ever-changing "open work." Within interior histories, interior architecture was seen as another iteration of the unstable relationship between the private and public spheres. These understandings shaped the evidence and the narratives that were used to tell the story of interior architecture, from

the fixed and supposedly transparent "architectural" view of the photograph and the survey history, to a view of the interior itself as ephemeral space *and* image bound up in its own representation. Both approaches leave us with problems – of conceptual rigor in the former and narrative coherence in the latter.

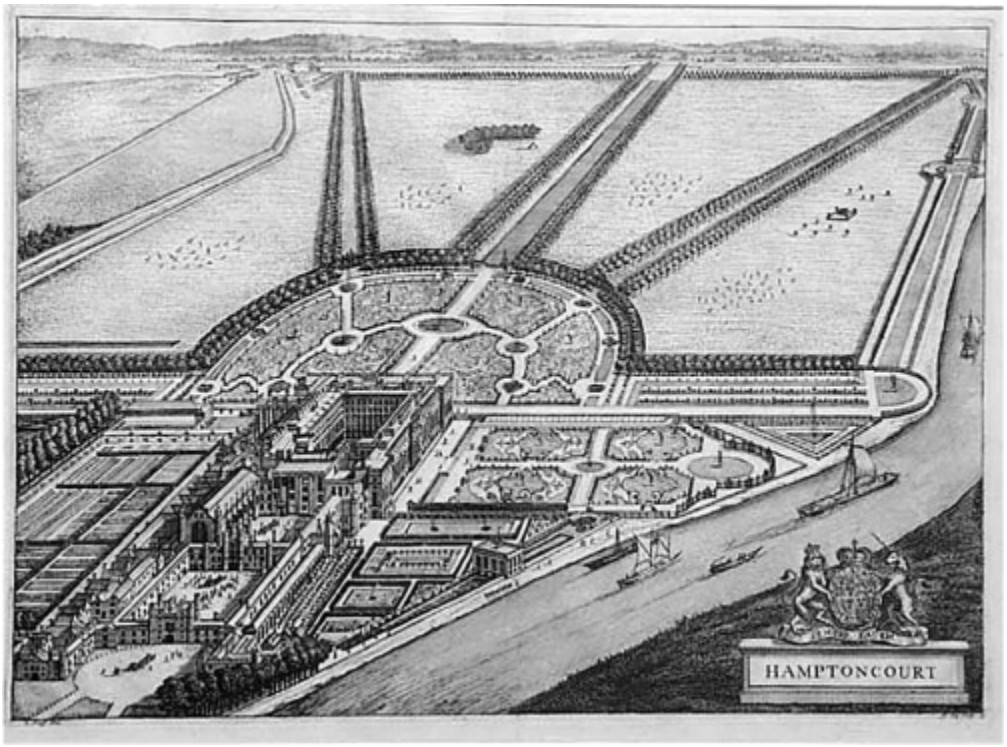

Figure 1.3 A composite building: Jan Kip and Leonard Knijff, "Hampton Court" (1708)

Image credit: Wikimedia commons

These are conditions shared with all those "herstories" that emerged alongside interior architecture itself in the late twentieth century. All of them share an interest in "deviant" practices or identities that challenge traditional heroic narratives. All of them rise in conjunction with "liberation" movements and assist in their self-identification. All of them, however, share the problem of evidence and narrative, for the very suppression and oppression of the suppressed and oppressed lay in the denial of their voices. These are problems shared by all historians. In

Memory, History, and Forgetting, Paul Ricoeur describes history as the construction of images of the past, which he identifies with Plato's problematic of the "eikon": "The eikon offers itself as the presence of an absent thing stamped with the seal of the anterior," but it is also a thing in its own right, in possession of a life of its own. Such a paradox should trouble all historians. History is not just storytelling, nor the creation of images. "The final referent of memory remains the past," writes Ricoeur, "whatever the pastness of the past may signify," and in history, "the representation of the past is found to be exposed to the dangers of forgetting, but is also entrusted to its protection."[25] [26]

If there are solutions to these problems, they will perhaps be found in the practice of interior architecture itself. The practice of altering existing buildings, after all, is in itself a historical practice, involving, like history, the reinterpretation of fragmentary pasts to give them utility in the present. Conversely, then, one might be able to say that interior architecture is constructed as much by its own history as recorded by it. If interior architecture is a process through which we represent the past, and its history is an analogous practice of representation, then how can we, in both spheres, acknowledge the pastness of the past, and be worthy of the protective trust that is placed in us as its interpreters?

Notes

1 John Kurtich, *Interior Architecture* (New York: Van Nostrand Reinhold, 1995).

2 John Pile, *A History of Interior Design* (New York: Wiley, 2000); Graeme Brooker and Sally Stone, *Re-readings: Interior Architecture and the Design Principles of Remodeling Existing Buildings* (London: RIBA, 2004); Fred Scott, *On Altering Architecture* (London: Routledge, 2008); Penny Sparke, *The Modern Interior* (London: Reaktion, 2008); Charles Rice, *The Emergence of the Interior* (London: Routledge, 2007).

3 Kurtich, *Interior Architecture*, p. vi.

4 Scott, *On Altering Architecture*, p. xv.

5 Ibid., p. xv.

6 Kurtich, *Interior Architecture*, p. vii.

7 Brooker and Stone, *Re-Readings*, p. 10.

8 Ibid., p. 9.

9 Kurtich, *Interior Architecture*, p. vii.

10 Ibid., p. vii.

11 Pile, *A History of Interior Design*, p. 8.

12 Ibid.

13 Ibid., p. 9.

14 Quoted in Sparke, *The Modern Interior*, p. 22.

15 Ibid., p. 11.

16 Pile, *A History of Interior Design*, p. 8.

17 Sparke, *The Modern Interior*, p. 12.

18 Pile, *A History of Interior Design*, p. 8.

19 Rice, *The Emergence of the Interior*, p. 19.

20 Ibid., p. 2.

21 Kurtich, *Interior Architecture*, p. vii.

22 Rice, *The Emergence of the Interior*, p. 29.

23 Pile, *A History of Interior Design*, p. 8.

24 Scott, *On Altering Architecture*, p. 12.

25 Ibid., pp. xv–xvi.

26 Paul Ricoeur, *Memory, History, and Forgetting*, trans. Kathleen Blamey and David Pellauer (Chicago and London: University of Chicago Press, 2004), p. xvi, 7, xvii.

Chapter 2

A history of style and the modern interior

From Alois Riegl to Colin Rowe

Sarah Deyong

From a historical perspective, the idea of modern architecture may be seen to coincide with the invention of modern art, and the same may be said of the modern interior. In fact, art, architecture, and interiors have histories that are intertwined, in part, because they bear on the question of style. Since style pertains to an aesthetic sensibility that we tend to associate with a given cultural period, rather than a discipline, the historical provenance of the modern interior cannot be easily separated from the history of its sister fields insofar as it constitutes a predominantly visual, tactile, and phenomenological mode of expression.

Two modern definitions of style

Behind the modern avant-garde's attempt to define a new style unique to its time, one can find two opposing theories underwriting this effort: Gottfried Semper's *Der Stil* (1861) and Alois Riegl's *Late Roman Art Industry* (1903). In their respective books, Semper traced the origins of architecture to craft, technique, and performance, while Riegl identified style with the psychology of form. The focus of Riegl's study is, therefore, not any purposeful object, as it was for Semper, who understood the shape of an amphora as an index of how the ancient Greeks collected water from the roofs of their houses. Rather, his study focuses on ornament, which he defined as the visible expression of an inner desire (*Wollen*) to transform the world via our interaction with it.[1] He stated,

> man is not just a being perceiving exclusively with his sense (passive), but also a longing (active) being. Consequently, man wants to interpret the world as it can most easily be done in accordance with his inner drive (which may change with nation, location, and time).[2]

Riegl further identified two modes of perception alternating throughout history, optic and haptic, and associated different artistic styles with the dominance of one perception or the other. While optic perception refers to a kind of long-range vision, characteristic of perspective and ancient Greek art, haptic refers to a kind of close-range vision and tactile perception characteristic of flat reliefs and late Roman art. This schema parallels that of other art historian-theorists, notably Wilhelm Worringer, who, in his 1907 doctoral thesis, defined art in terms of two similar categories: *abstraction*, an inner sensation, and *empathy*, a joyous affinity with the material world.

Semper's definition of style must have presaged the modernist dictum form follows function, but in this regard, it is a definition that applies mainly to the building's structure and exterior. With the modern interior, on the other hand, it is Riegl's and Worringer's notion of style that would prove influential. A good illustration of this influence is the well-

known Werkbund debate between architect Hermann Muthesius and artist Henry van de Velde in 1914. Whereas Muthesius, following Semper, believed that a new style must emerge from standardization and the techniques of mass production, van de Velde, following Riegl, asserted the primacy of aesthetic expression above standardization.[3]

This debate would play out in early Werkbund projects and manifest itself in the schism between the exterior and interior. Peter Behrens's AEG Turbine Factory in Berlin (1908), for instance, illustrates the ambiguous adaptation of old and new building technologies. While its iron frame and large expanses of glazing anticipate curtain-wall construction, the language of its façade is nevertheless compromised by the fact that the brick-corner masses are not load bearing. Such semantic confusion is also evident in the schism between interior and exterior with respect to another Werkbund member, Adolf Loos, a critic of the Viennese Secessionist movement. While Loos's exteriors are austere and minimal, his interiors are tactile and luxurious: the bedroom he designed for his wife, Lina Loos, is made out of fur. As such, his interiors may seem to contradict his own writings condemning ornament, but it could also be argued that they follow a different attitude toward dress and decorum.[4] Indeed, for Loos, the domestic life of the individual was an intensely private affair reserved for the interior, but for commercial projects and public figures, this logic of privacy did not apply, for Loos did, in fact, adorn his exteriors. These latter projects include the American Bar (1908), the tailor shop for Goldman & Salatch (1909–11), and the unbuilt house for Josephine Baker, an African American entertainer and one of the most celebrated women of her time (1928).[5] Baker was an avid swimmer, and the house's striking pattern of black and white stripes may have been inspired by the nautical pattern on women's bathing suits.[6] Although Loos infamously condemned ornament in his essay, "Ornament and Crime," he also distanced himself from "the purists who pushed the [logic of function] to the absurd, [in claiming] that ornament should be systematically abolished."[7] Indeed, it might be even said that Loos's architecture is fundamentally about the interior, as evidenced by his concept of the *Raumplan* (space plan).

The schism between interior and exterior can be seen in other early examples of modern architecture, including Gropius's Fagus Factory (1911, with Adolf Meyer), and in the history of the Bauhaus itself. By the time Gropius stepped down as the school's director in 1928, he had purged its curriculum of its formative experiments with Expressionism in favor of a strict functional approach to style. But if the functionalist argument constitutes the canonical version of the history of modern architecture, the opposing argument on style, offered by Riegl, Worringer, van de Velde, and Loos, points to an alternate history centered on the modern interior.

Abstraction and the space-time continuum

Riegl's definition of style in terms of haptic perception, as well as Worringer's category of abstraction, may have given unprecedented direction to the ideas of the modern avant-garde. If so then the driver must not have been architecture, but the fine arts, especially painting. In their search for a new style, many modern artists rejected realism, and this accorded well with the theories of Riegl and Worringer. Since perspectival construction reduces time to a static moment, it followed that classical painting was predicated on a drawing convention that presents a false picture of reality.

Indeed, in confronting the conventions of classical painting, Paul Cézanne radically reframed the problem of representation at the turn of the twentieth century, and painted *not* what the eye sees in a kind of optical illusion, but what the mind-body complex perceives in time. His paintings register temporal "distortions" like a tabletop stretched downwards or a wall bent sideways. In other words, they depict reality not as it is experienced in a static moment but in the duration of days, weeks, and months (Cézanne sometimes took months to complete his paintings, and even then, he considered them unfinished). According to Maurice Merleau-Ponty, such distortions stem from the artist's desire to depict reality in the process of becoming. He wrote,

> it is Cézanne's genius that when the overall composition of the picture is seen globally, perspectival distortions are no longer visible in their own right, but rather, contribute, as they do in natural vision, to [the] impression of an emerging order, an object in the act of appearing, organizing itself before our eyes.[8]

Cézanne is generally considered the father of Cubism, which, in turn, inspired other avant-garde movements from Suprematism to De Stijl. But in the case of De Stijl, we find not only the manifestation of a space-time continuum, but also greater experimentation with abstraction. To this end, the Dutch De Stijl movement strove to eliminate all traces of naturalistic representation, reducing the elements of painting to the minimum abstract essentials: three primary colors (blue, red, and yellow), and horizontal and vertical lines.

This distillation, as Yves-Alain Bois has observed in "The De Stijl Idea," did not come readily, but was determined after much struggle and debate. It evolved as slowly in painting as it did in sculpture and architecture. While the architect J.J.P. Oud took his cue from sculpture and reduced the essential elements of architecture to cubic masses, Theo van Doesburg took his cue from painting and distilled the essential elements to planes. In his interior design of the *Café Aubette* (1927), he rotated Mondrian's abstract grid on the diagonal, possibly to neutralize the horizontal and vertical lines of the existing architecture (in one photograph, van Doesburg aimed his camera so that the vanishing point appeared to dissolve in the diagonal composition of the mural).[9] However, his real breakthrough did not come until his famous Counter Constructions for the Hôtel Particulier (1923) with architect Cornelis van Eesteren. From van Eesteren, van Doesburg had learned how to draw in axonometric, a drawing convention that shows the plan and section simultaneously; and using this technique, he drew counter constructions of the hotel's cubic masses, using horizontal and vertical planes exploded apart and suspended in space. The counter constructions, therefore, mark an important shift in De Stijl's thinking about the generative elements of architecture, here distilled to

horizontal and vertical *planes* rather than lines or masses. This idea, moreover, may also have been the source of Mies van der Rohe's Barcelona Pavilion (1929).[10] For it too is a counter composition of planes and volumes; although, instead of the three primary colors, Mies has substituted marble, chrome, and glass (Figure 2.1). As a composition, Mies's design is dynamic, changing in time as the visitor zigzags through an enfilade of open spaces.

Figure 2.1 Interior of Barcelona Pavilion by Mies van der Rohe

Image credit: Sarah Deyong

Form and counter-form

De Stijl's space-time concept parallels that of other architectural developments related to modern painting. In the first years of the Bauhaus, Gropius recruited artists from the German Expressionist movement – a movement that is often associated with Riegl's and Worringer's theories. Following in their footsteps, Laszlo Moholy-Nagy, who joined the school in 1923, proposed a new space-time vision. His student Gyorgy Kepes

expanded on this concept and further defined the new vision in terms of transparency; that is, the simultaneous perception of multiple spatial locations "without optical destruction of each other."[11]

In the 1950s, the term was famously resurrected by architectural historian Colin Rowe and artist Robert Slutzky. In their essay, "Transparency: Phenomenal and Literal," the authors made an important distinction between the literal transparency of a material like glass and the complex visual effects of composition.[12] Analyzing Fernand Léger's painting, *Three Faces*, they explained how the overlapping composition creates an ambiguous tension, where shapes and colors are simultaneously seen both in front and behind each other.

The originality of their analysis, however, lies not with painting, but with interior architecture conceived as an interplay between solid and void. Here, the authors' primary example is Le Corbusier's Villa Stein at Garches, where solid elements like walls and columns create implied spatial figures like slits and slots. They described how the openings of the vertical windows along the exterior end walls line up with an interior row of columns to form an implied slot running parallel to the front façade. This slot, they wrote, is mirrored by a second parallel slot; it runs behind the garden façade and is implied not only by the vertical side windows, but also by the penthouse terrace that projects beyond the ends of the lateral side walls. Perpendicular to these slots is a central space whose contour can be discerned by a second row of interior columns, intersecting the first. This implied spatial figure is traversed by an irregularly shaped slot, configured by a low, curved wall (forming a bookshelf and railing to the opening below), and by the outline of the two stairways that flank it.

While these implied figures work as three-dimensional extrusions of the plan, there are other implied spatial figures that are best represented in section. Elements like the main garden terrace, the third-floor balcony, and the penthouse terrace form a composition of objects and their counter forms. The parapet on the third-floor balcony, for example, forms a bounding surface to the implied volumes of both the main garden terrace below *and* the penthouse level above. Furthermore, the canopy, whose

underside is painted blue, forms a bounding surface not only to the implied figure of the garden terrace, but also extends the interior of the sitting room on the third floor (Figure 2.2). In the Villa Garches, therefore, we find not only a composition of solid elements but also a counter-composition of implied spatial volumes.

This doubling of the solid-void (or figure-ground) relation is reminiscent of De Stijl's counter constructions and constitutes a design strategy that is still relevant today. Conceivably, its most recent manifestation is what UN Studio has called the "blob-to-box" model, where the shape of the void has a presence equal to the object-ness of the blob (Figure 2.3).[13] But as I have been tracing here, this modernist strategy owes its provenance to a particular definition of style in art and architectural history – a provenance that goes back to the likes of Riegl and Worringer. If Semper represents the trajectory of functionalism relegated to structure and the exterior, then Riegl and Worringer form an alternate trajectory relegated to painting and the interior. This alternate history relates not to engineering and technical performance, but to the philosophy of aesthetic experience and the psychology of perception, in a word, a cultural sensibility. Just as the split between form and function is ultimately an artificial one, so too is the dichotomy between architecture's interior and exterior.

Figure 2.2 Interior of Villa Stein at Garches by Le Corbusier

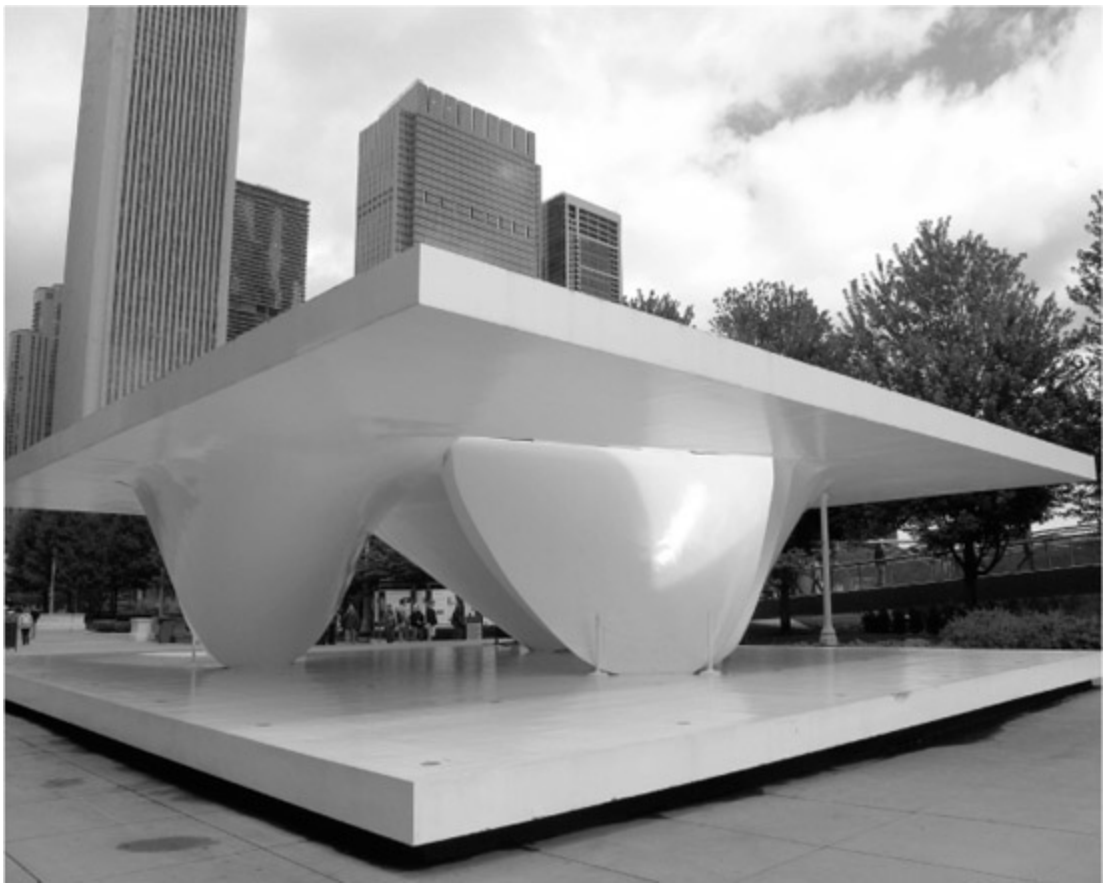

Figure 2.3 UN Studio, "blob-to-box" model

Notes

1 Gottfried Semper, *Style in the Technical and Tectonic Arts, or, Practical Aesthetics*, trans. Harry Francis Mallgrave (Los Angeles, CA: Getty Research Institute, 2004).

2 Alois Riegl, *Late Roman Art Industry*, trans. Rolf Winkes (1901; Rome: Giorgio Bretschneider, 1985), p. 231.

3 For van de Velde, "The desire to see a standard type come into being before the establishment of a style is exactly like wanting to see the effect before the cause. It would be to destroy the embryo in the egg". See "Werkbund Theses and Antitheses", in *Programs and Manifestoes on 20th-Century Architecture*, ed. Ulrich Conrads (London: Lund Humphries, 1970), p. 30.

4 This point has been argued by Panayotis Tournikiotis, *Adolf Loos* (Princeton, NJ: Princeton Architectural Press, 1994), p. 23.

5 Commissioned by the owners of Goldman & Salatch tailors, the Looshaus in Michalerplatz, situated directly across from the Imperial Palace, was designed as an apartment complex with retail on the ground floor. While the tailor shop was embellished with Doric columns and marble, the façade of the apartments above was quite austere. In fact, it was so austere that Loos was ordered to adorn the apartment windows with flower boxes.

6 For this and other references to gender and fashion, see Anne Anlin Cheng, *Second Skin: Josephine Baker and the Modern Surface* (Oxford: Oxford University Press, 2011), pp. 81–82.

7 "Ornament and Education" (1924), *Spoken Into the Void: Collected Essays, 1897–1900* (Chicago: Graham Foundation; New York: IAUS, 1987).

8 Furthermore, Merleau-Ponty noted, "The lived object is not rediscovered or constructed on the basis of the contributions of the senses; rather, it presents itself to us from the start as the center from which these contributions radiate. We *see* the depth, the smoothness, softness, the hardness of objects; Cézanne even claimed that we see the odor. If the painter is to express the world, the arrangement of his colors must bear within this indivisible whole, or else his painting will only hint at things and will not give them in the imperious unity, the presence, the unsurpassable plenitude which is for us the definition of the real." See "Cézanne's Doubt" in *Sense and Non-Sense* (Evanston, IL: Northwestern University Press, 1964), pp. 14–15. I am grateful to Yehuda Safran for showing me this essay.

9 Van Doesburg's influence on Mies van der Rohe is well documented. See, for example, Franz Schulz, *Mies van der Rohe: A Critical Biography* (Chicago: University of Chicago Press, 1985), p. 117.

10 Van Doesburg's influence on Mies van der Rohe is well documented. See, for example, Schulz, *Mies van der Rohe*, p. 117.

11 Kepes writes: "Transparency means a simultaneous perception of different spatial locations. Space not only recedes but fluctuates in continuous activity. The position of the transparent figures has equivocal meaning as one sees each figure now as the closer, now as the further one." Kepes, *Language of Vision* (Mineola, NY: Dover Publications, 1944), p. 77.

12 The essay was written in 1955–56. It was published in *The Mathematics of the Ideal Villa and Other Essays* (Boston, MA: MIT Press, 1976), pp. 159–183.

13 Ben van Berkel and Caroline Bos, *UN Studio: Design Models, Architecture, Urbanism, Infrastructure* (London: Thames and Hudson, 2008).

Chapter 3

Quadrature

The joining of truth and illusion in the interior architecture of Andrea Pozzo

Jodi La Coe

In 1693, Andrea Pozzo published the first volume of his treatise, *Perspectiva pictorum et architectorum*, a pedagogical demonstration of his perspective drawing method and projection techniques employed in creating interior spatial illusions, *quadrature*.[1] Pozzo, as both theorist and practitioner, realized many of his immersive *quadrature* designs throughout Italy and Austria, mainly in churches and convents of the Jesuit order to which he also belonged.[2] Unlike many perspective theorists who merely represented the image of a person within a section through the cone of vision, Pozzo positioned an embodied observer within the constructed illusion, extending interior space through the joining of the real and the fictitious.[3]

In perspective theory, space was conceived as a homogenous system in which vision was subject to mathematical laws. At the beginning of the seventeenth century, Rene Descartes, who is credited with this shift in

spatial understanding, wrote in his *Discours de la méthode pour bien conduire sa raison, et chercher la vérité dans les sciences:*

> I took the subject matter of geometry, which I conceived to be a continuous body or a space indefinitely extended in length, breadth, and height or depth, divisible into distinct parts, which may have distinct shapes and sizes and may be moved or transposed in all sorts of ways.[4]

The coordination of three axes – length, height, and depth – determined Cartesian space, in which depth and height are equivalent mathematical positions without hierarchy and, therefore, homogenous. However, the positioning of an embodied observer within mathematical space allowed Pozzo to re-center man within a system of meaning, both spatial and spiritual. Baroque perspectival illusions sought to recreate the center of the universe within uniform space. It achieved this effect by physically inhabiting the *position* from which the illusion converged with the physical to produce a transcendental interior experience.

Truth and falsehood

The positivistic quest initiated by the Scientific Revolution sought to reduce all phenomena to a few all-encompassing rational truths based in mathematics. Reason replaced metaphor as an explanation for the phenomena of the physical world. In both the arts and sciences, popular debate concentrated on the distinction between truth and illusion.[5] A deception of the senses approached the ethical question of the ability of the intellect to distinguish truth in the physical world.

For Descartes, visual illusions were a sensual obstacle to the pursuit of truth; the separating of the "true" from the "false" occupied the main intellectual problems of the seventeenth century.[6] As Alexandre Koyré explained, Descartes's quest to determine what is true was an effort to judge the world properly.[7] Descartes phrased it as follows:

> And I always had an extreme desire to learn to distinguish truth from falsehood in order to have a clear insight into my actions and proceed in this life with assurance.[8]

While Descartes was opposed to illusion in its many forms, perspective treatises by the end of the seventeenth century included the creation of fantastic illusions on a variety of surfaces. For example, in his book, *La perspective curieuse, ou magie artificielle des effets merveilleux, de l'optique par la vision directe*, Jean François Niceron disclosed his method of creating anamorphic projections. While these images were created on flat or irregular surfaces, they were to be viewed at an angle or on mirrored surfaces of cones, cylinders, and spheres. In the Convent of Trinitá dei Monti in Rome, Emmanuel Maignan, with the assistance of Niceron, produced two anamorphic illusions along the walls of narrow corridors. While one of the paintings was destroyed in an uprising shortly after the French Revolution, the remaining illusion, viewed frontally, is a representation of the landscape of the Straits of Messina in Calabria. When viewed from an angle along the wall, the hidden image of San Francesco di Paola sitting under a tree lifts away from the scene of his homeland. Many anamorphic illusions disguised hidden images with erotic, or even heretical, content.

Deception of the senses

For Descartes, sense perception, and vision in particular, were to be doubted and were, therefore, undermined in his model for rational thought. Although vision was privileged among the senses, Descartes was suspicious of the profound mental exercise necessary to overcome sensory deceptions.[9] He wrote of the eye as the passive receptor of light, declaring that the "first opaque structure in the eye receives the figure impressed upon it by the light."[10] Descartes suggested to his readers to place a dissected human eye, or kindred animal eye, in a shutter through which to view the images formed on a piece of paper held to the back of the eye.[11] Similar to the images produced by the camera obscura, the retinal image is transposed vertically

through the passive, ocular lens, requiring mental interpretation of the sensory data. Descartes clarified his theory of the transmission of light, stating:

> I would have you conceive of light in a "luminous" body as being simply a certain very rapid and lively movement or activity, transmitted to our eyes though air and other transparent bodies, just as the movement or resistance of the bodies a blind man encounters is transmitted to his hand through his stick.[12]

In *The World*, also known as his *Treatise on Light*, Descartes differentiated between the sensation of light and its cause using the analogy of language: the relationship between what is represented to the thing itself.[13] As the eye truly becomes the passive receptor, retinal images acquire an objectivity, a truth. In this sense, the passive lens requires the mind to interpret the arrangement of light rays to understand the shape and position of objects within the Cartesian system. Reflections and illusions, however, appear to be the real things because they affect the eye in the same ordered correspondence of light rays.[14] Perspective illusions deceive the eye itself through the presentation of light rays that appear to depict a three-dimensional object. Additionally, in *La Dioptrique*, Descartes concluded that the mind was also capable of producing a type of sensory deception, as in dreams or an ecstatic state. According to Descartes, the mind was susceptible to delusions of all sorts including hallucinations, lunatic cravings, and dreams. In these cases, sensual perception seems so evidently true yet is not real.[15] Although he was surrounded by a proliferation of treatises on and examples of perspective illusions, Descartes opposed any art form that sought to confuse the senses, especially anamorphosis. Descartes philosophically objected to the disjunction between the apparent image and its disguised reconstruction.

Descartes employed many analogies of light and vision to describe reason and rational thought. In 1628, he wrote in his *Regulae ad directionem*

ingenii (Rules for the direction of the mind) that a lack of reason is virtually equal to blindness.

> For it is very certain that unregulated inquiries and confused reflections of this kind only confound the natural light and blind our mental powers. Those who so become accustomed to walk in darkness weaken their eyesight so much that afterwards they cannot bear the light of day.[16]

In Descartes's view, indulging in illusions and deceptions dulled the intellect and impeded the recognition of truth:

> I suppose, therefore, that whatever things I see are illusions; I believe that none of the things my lying memory represents to have happened really did so; I have no senses; body, shape, extension, motion, place are chimeras. What then is true? Perhaps only this one thing, that nothing is certain.[17]

After Descartes, only the mathematically ordered gaze of the geometer could objectively analyze natural phenomena fixed by coordinates within Cartesian space.[18] Perspective represented the world from a fixed monocular viewpoint at a static moment in time, and as such, drastically simplified visual experience.

Joining truth and fiction

Descartes's critique of illusion extended to the visible in general. All forms of artifice, including *quadrature*, were obstacles in the search for objective truth.[19] In contradiction to his intentions, Descartes's philosophies led to the reduction of the sensual experience of Nature to a theater of illusions, mathematically determined, according to Dalia Judovitz, "an effect of human artifice."[20] Similarly, perspective transformed an embodied understanding of reality into appearance. To paraphrase Vittorio de Feo in

Andrea Pozzo: architettura e illusione, "more than performing mathematical perspective with precision, Pozzo recognized a possibility of reality where perspective translates the virtuality of the real with the help of the imagination."[21] However, it was the incorporation of the viewer in his works that opened the narrative possibilities of perspective illusions.

In the thirtieth figure of the first volume of his treatise, Pozzo wrote, "*Optica projectio ædifici IONICI; ubi de modo jugendi fictum cum vero.*"[22] In the first English translation, John James of Greenwich liberally interpreted this passage as "An IONICK Work in Perspective; with the Manner of reconciling the fictitious to the solid Architecture." Clearly, the second half of the statement did not follow the original text. One might argue that James chose to depict what Pozzo was proposing, rather than to awaken the debate over truth and sensual deception. The accompanying figure depicts just that sentiment, the dividing line between the solid or three-dimensional building, and his two-dimensional painted surface extending the solid into the fictitious architecture. However, in the sixty-second figure, Pozzo used the phrase "*ædificia solida*" when he wanted to signify "solid architecture." Given the centrality of the Roman Jesuit College in contemporary scientific debates, Pozzo would have supported a closer translation of the original Latin phrase as "the manner of joining the fictitious to the real (or true)."

Unlike contemporary artists, Pozzo was not creating perspectival interior views within a frame. He was concerned with the embodied experience of illusion, with a seamless transition between the real and the fictitious, a joining of truth and illusion at a fixed point within Cartesian space. At this single point, marked in the paving pattern with a marble or bronze disk, and in the right light, the illusion appears to be real, the senses are deceived. When one moves away from the given vantage point, the architecture, ornaments, and figures appear to grow distorted. At the end of the first volume of *Perspectiva pictorum et architectorum*, Pozzo included his response to those who advocated the use of multiple viewpoints within a large perspective illusion attempting to expand the area from which the illusion is effective. Pozzo believed that the distortion of figures that occurs

when viewed from other angles lends itself to illusion by increasing the dramatic effect when properly positioned.

Flesh and stone

Thirteen years prior to the publication of his advocation of a single point of view, Pozzo created the hallway to the rooms of St. Ignatius in the Casa Professa in Rome, in which he experimented with overlapping perspective illusions combined with frontal presentations of framed images. The result is a combination of painterly effects and a layering of illusionistic techniques. More than in any of his other *quadrature*, perspective illusions also known in French as *trompe l'oeil*, or "trick of the eye," Pozzo played with the joining of truth and illusion in this small, unassuming space. The entry to the hallway is immediately off the landing of a wide stair, suggesting that these spaces are tucked between the main levels of the Jesuit convent. When approaching the room, the entry wall begins the illusion with the appearance of sculptural niches containing life-like statues of Jesuits Aloysius Gonzaga and Stanislaus Kostka surmounted by gray, stone-like *putti* (small, chubby, often winged, male cherubs) over the cornice. In the stairway, the color palette is subdued in grays, browns, and muted flesh tones joining in the surrounding surfaces of plaster and gray marble. In contrast, the interior of the hallway erupts in color and glittering gold. The two saintly visages in the landing also oppose the numerous, voluptuous, fleshy figures in the hallway.

Upon entering the hallway, a few steps place the viewer above a marble disk, which marks the proper point of view on the floor. From this point, Pozzo corrected the architecture of the space in his illusion. The far wall, which is crudely angled, was painted to appear farther away and perpendicular to the side walls. A pair of angels playing musical instruments are sitting under an archway supported by ornate columns framing the view beyond to a domed space terminated by a simple altar for St. Ignatius. In contrast, the hallway, which is a plain, barrel-vaulted space, appears to have ornate pink marble columns with gold composite capitals supporting

voluptuous brackets, also highlighted in gold, spanning a flat ceiling. The space of the brackets extends the height of the small room. Just as the subdued palette and features of the landing contrast with the Baroque ornament of the hallway, the altar of St. Ignatius and his rooms are undecorated, reflecting the humility of a devoted life.

The space contains four large windows and a recessed doorway in the wall to the right. Opposite the window wall is the door and window into the rooms of St. Ignatius, which are a few steps higher than the level of the hallway. The window is duplicated in the painted illusion in order to carry the symmetry in the arcade along the side wall. The stairs and the door leading to the rooms present the most difficult piece to incorporate into the illusion. Although Pozzo varied the thickness of the marble door frame, the stairs and their railings do not conform to the perspective. Within the ornate gold-leafed beams of the illusionistic ceiling are a variety of figures and framed images. Larger, adult angels are painted as fleshy winged beings carrying framed monochromatic profiles of important Jesuit brothers. All framed images with the illusion are presented undistorted by the forced perspective viewpoint and are, therefore, meant to be viewed frontally. Continuing with the juxtaposition of contrasts, there are two versions of *putti*, rosy-fleshed babes and gray stone statues. These cherubs are at approximately the same scale, lending to the interplay between flesh and painted stone. Also framed in the ceiling are monochromatic scenes from the life of St. Ignatius in vibrant hues.

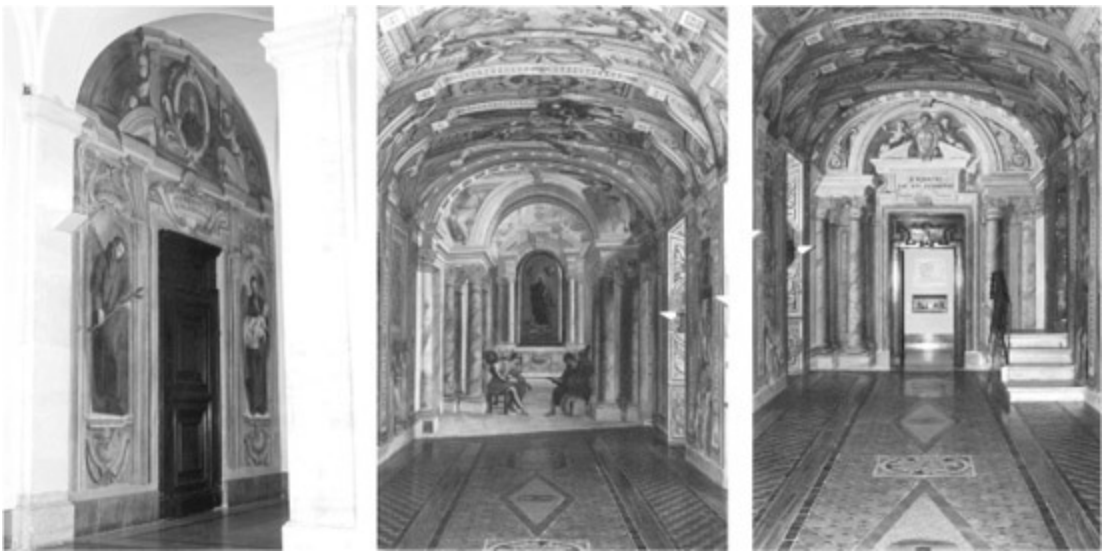

Figure 3.1 Three principal views of the hallway to the rooms of St. Ignatius by Andrea Pozzo (1618)
Image credit: author

The side walls contain seven bays which alternate between four window bays and the three interstices. On the wall opposing the windows, the bays corresponding to each window appear to be deeper than the others, with two adult angels standing below a framed scene from the life of Christ in each. The interstitial bays are less wide, accommodating a longer frame, each containing a miraculous scene from the life of St. Ignatius. Under these frames, fleshy *putti* are shown with vases of flowers, while above, many fleshy *putti* with tiny wings occupy spaces within the ornate brackets adjacent to painted stone *putti*. Some of the fleshy babes look down at the viewer, while others display additional monochromatic profile portraits of important Jesuits.

Figure 3.2 Ceiling of the hallway to the rooms of St. Ignatius depicting fleshy and stone *putti*

Image credit: author

Figure 3.3 Overlapping brackets in the corner of the ceiling of the hallway to the rooms of St. Ignatius

Image credit: author

Walking toward the center of the hallway, one experiences an elongation of the architectural interior and figures. These appear to grow, to stretch the farther away one moves from the marble disk. In contrast, the framed images attract the eye away from the distortion as they are viewed frontally.

Turning around completely, one faces the entry wall. Looking in this direction, one can see the stairs to the rooms of St. Ignatius that were previously unnoticed in the periphery. The entry wall is also in perspective illusion when viewed from a point designated by a marble disk in the floor pattern symmetrically opposite the first marble disk. Here, Pozzo employed a second point of view; the perspective illusion is divided at the midpoint of the room. In the corners of the room, the distortions cause the brackets to appear to overlap each other, while in the center of the room the figures are nearly frontal.

In the hallway to the rooms of St. Ignatius, Pozzo invited the viewer to participate in the room, to walk around the space in order to view the layers of the illusion and counter-illusion. This process simultaneously reveals and destroys the illusionistic effect. In keeping with the contemporary debate, Pozzo redefined perspective as a "Counterfeiting of the Truth."[23] Joining truth with illusion, the layering of illusion and artifice in this hallway reveals his playful manipulation of the visual experience of interior architecture.

Notes

1 Volumes one and two of *Perspectiva pictorum et architectorum* were originally published by Giovanni Giacomo Komarek in Rome in 1693 and 1700, respectively, and included both Latin and Italian text. Only the first volume was translated and distributed widely. Komarek published two translations of the first volume: Italian/German and Italian/French versions, both in 1700. Another German translation paired with the original Latin text was published in Vienna in 1706 by Jeanne Boxbarth and Conrado Bodenter. A Latin/English version, entitled *Perspective for Architecture and Painting*, was published by John James of Greenwich (London, 1707). Giuseppe Castiglione published a French/Flemish translation in Brussels, 1708. The Jesuits even translated a copy into Chinese, 1737 (see Marina Carta and Anna Menichella, "Il successo editoriale del Trattato", in *Andrea Pozzo*, ed. Vittorio de Feo and Valentino Martinelli [Milan: Electa, 1996], p. 230).

2 From 1676 to 1680, Pozzo travelled to Torino, Milan, and Como completing a number of works. Afterwards, he settled in Rome to paint his celebrated masterpieces from 1681 to 1702. These

included the nave, dome, and altar of the Chiesa di Sant'Ignazio, the Cappella della Vigna, the refectory of Trinitá dei Monti, and the hallway to the rooms of St. Ignatius in the Casa Professa adjacent to Il Gesú. While in Rome, Pozzo also painted several canvases and illusionistic side chapels, an altar, and a false dome for the Chiesa del Gesú in Frascati. In 1702, Leopold I called Pozzo from Rome to Vienna. As he travelled for two years, Pozzo made many more perspective illusions in churches and palazzi in Florence, Trento, and Montepulciano. In Belluno, he designed the architecture for a Jesuit college. Pozzo spent the final years of his life in Vienna designing illusions in the Universitätskirche, Franziskanerkirche, and the palazzo Lichtenstein. In addition to the college of Belluno, Pozzo witnessed the construction of his architectural designs in Ragusa, Lubiana, Trieste, Montepulciano, and Trento. From his numerous designs for altars, he executed the elaborate altar constructions for both Il Gesú and Chiesa di Sant'Ignazio in Rome (see Vittorio de Feo, *Andrea Pozzo: Architettura e illusione* [Rome: Officina Edizioni, 1988] and Roberta Maria Dal Mas, "La opere architettoniche a Ragusa, Lubiana, Trieste, Montepulciano, Belluno e Trento", in *Andrea Pozzo*, ed. Vittorio de Feo and Valentino Martinelli [Milan: Electa, 1996], pp. 184–203).

3 For contemporary perspective treatises, see Abraham Bosse, *La manière universelle de M. des Argues Lyonnois pour poser l'essieu & placer les heures & autres choses aux cadrans au Soleil* (Paris: Petreius, 1643); Jean Dubreuil, *La Perspective pratique nécessaire à tous peintres, graveurs, sculpteurs . . .* (Paris: Melchior Tavernier and François L'Anglois dit Chartres, 1642); and Ferdinando Galli-Bibiena, *L'Architetture civile . . .* (Parma: Paolo Monti, 1711).

4 Rene Descartes, *Discourse on the Method of Rightly Conducting One's Reason and of Seeking Truth in the Sciences* original edition, *Discours de la méthode pour bien conduire sa raison, et chercher la vérité dans les sciences*, Leiden, Netherlands: Ian Maire, 1637; translation: *Philosophical Writings*, trans. Elizabeth Ascombe and Peter Thomas Geach (New York: Macmillan Publishing Company, 1971), p. 34.

5 Martin Kemp, *The Science of Art: Optical Themes in Western Art From Brunelleschi to Seurat* (New Haven: Yale University Press, 1990).

6 This statement was recorded in Howard Hubbard, *Bernini* (London: Penguin Books, 1965), p. 19, according to Basil Willey, *The Seventeenth-Century Background* (New York: Columbia University Press, 1977), pp. 9ff, passim.

7 Alexandre Koyré, "Introduction", in *Philosophical Writings*, ed. Rene Descartes, trans. Elizabeth Anscombe and Peter Thomas Geach (New York: Columbia University Press, 1961), p. xxi.

8 Rene Descartes, *Philosophical Writings*, trans. Elizabeth Anscombe and Peter Thomas Geach (New York: Columbia University Press, 1961), p. 13.

9 Ibid., pp. 244–245.

10 Ibid., p. 241.

11 Dalia Judovitz, "Vision, Representation and Technology in Descartes", in *Modernity and the Hegemony of Vision*, ed. David Michael Levin (Berkeley, CA: University of California Press, 1993), p. 75.

12 Op. cit., p. 71.

13 Maurice Merleau-Ponty, *The Primacy of Perception and Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics*, trans. James M. Edie (Chicago, IL: Northwestern University Press, 1964), p. 170.

14 Descartes, *Philosophical Writings*, p. 242.

15 Rene Descartes, "Meditations on the First Philosophy Wherein Are Demonstrated the Existence of God and the Distinction of the Soul From Body", in *Philosophical Writings*, trans. Elizabeth Anscombe and Peter Thomas Geach (1642) (New York: Macmillan Publishing Company, 1971), pp. 61–62.

16 Rene Descartes, *Regulae ad directionem ingenii* (Rules for the direction of the mind) (unpublished manuscript, 1626–1628); translation found in Judovitz, "Vision, Representation and Technology in Descartes" in *Modernity and the Hegemony of Vision*, ed. David Michael Levin (Berkeley, Los Angeles, and London: University of California Press, 1993), p. 67.

17 Descartes, *Philosophical Writings*, p. 66.

18 Op. cit., p. 178.

19 Dalia Judovitz, "Vision, Representation and Technology in Descartes", and Hans Blumenberg, "Light as a Metaphor for the Truth: At the Preliminary Stage of Philosophical Concept Formation", in *Modernity and the Hegemony of Vision*, ed. David Michael Levin (Berkeley, Los Angeles, and London: University of California Press, 1993), pp. 63 and 53, respectively.

20 Ibid. (Judovitz), p. 65.

21 de Feo, *Andrea Pozzo*, pp. 14–15.

22 Andrea Pozzo, *Perspective in Architecture and Painting: An Unabridged Reprint of the English-Latin Edition of the 1693 "Perspectiva pictorum et architectorum"* (a reprinting of the London 1707 edition), trans. John James of Greenwich (Mineola, NY: Dover Publications, Inc., 1989), p. 73.

23 Ibid., p. 221.

Chapter 4

Spatial therapies

Interior architecture as a tool for the past, present, and future

Ziad Qureshi

Profound change is driven by technological and social developments impacting a multitude of conditions and mixed feelings in the present: trepidation about an uncertain future versus nostalgia for the past. Current technological and social changes represent potential for advancement and fundamental disruptions to our traditional way of living and functioning in social, economic, and spatial realms. This is not an entirely new phenomenon, however, as the disruptive effects of sociotechnological change have been a consistent theme throughout modern history. In earlier eras, understanding the relationship between past and present was essential to navigating a path to the future. This strategy offers a valuable historical reference for addressing the dynamic conditions of today.

The emerging field of interior architecture represents a unique and valuable opportunity to apply an historical strategy. Through its motivations, interior architecture inherently reconciles the engagement of

the existing with the new – a critical amalgamation of the past and present through spatial design to enable the future. Distinct from the notion of the ***tabula rasa*** architecture, this discipline establishes how ***space*** within existing buildings can serve as a means of addressing and stabilizing our contemporary conditions. It achieves this by literally combining the existing physical past with the new interior installation of the present. Thus, interior architecture is a ***spatial therapy*** for critically understanding and connecting the past, present, and future through design actions responding to profound changes. This chapter examines contemporary opportunities for interior architecture to illustrate the critical potential of this emerging discipline. It demonstrates how interior architecture is among the most relevant design tools of today – where history, theory, and design unite to address the most imperative issues in an era of disruptive change.

Future beginnings

Attitudes toward the future have varied throughout history, with a consistent connection between these perceptions and resultant design perspectives. Interior architectural design is an inherently productive and constructive activity. During the transformative era of the Industrial Revolution, mechanized society produced capital, manufactured goods, and leisure time for the masses that directly impacted the built environment. Social and environmental transformations were experienced on an unprecedented scale, resulting in variant attitudes about the future direction of design. Industrialization, technological development, urbanization, and social change resulted in fundamental questions on how to reconcile mass production with human culture. Designers' reactions ranged from nuanced romanticism, to traumatized post-war expressionism, to unabashed futurism. While the romantics of the nineteenth century proposed the sublime landscape as a counterpoint to mechanized rationalism and scientific understandings, illustrated by luminous works such as Pugin's *Contrasts* and Mary Shelley's *Frankenstein*, Italian futurists such as architect Antonio Sant'Elia violently resisted the limits of the past. Sant'Elia

celebrated the potential of the machine alongside revolutionary change, restlessness, and the ephemeral conditions of a modernity.

Contemporary discourse has once again echoed this historical precedent, with design working as before to express varied philosophies reacting to fundamental social changes in technology, production, consumption, and connectivity. The recurrent theme of structural economic and social change via technology was discussed by theorists such as sociologist Daniel Bell in the 1970s. In his seminal essay, "Teletext and Technology," Bell makes the case that structural change is inevitable and relevant to the past, present, and future. He posits that lessons may be learned from history that can be applied to the future. Bell claims that human society has consistently adapted through "creativity and surprise" in face of great challenges.[1] Supplemental to this perspective, optimistic contemporary futurists such as Ray Kurzweil, Director of Engineering at Google, have embraced a social vision of human needs satisfied by unprecedented abundance, enabled by innovative new technologies from cognizant computing to driverless vehicles and cloud-based data analysis.[2]

Figure 4.1 Burning Studios: *Bloom* Installation (2009) in Temple Works Mill (Bonomi Brothers – 1840), Leeds, UK

Image credit: Jim Moran

Alternately, traditionalist conservatives have maintained that in order to navigate the uncertainties of the future amidst change, we must respect our past and build on its rich layers. The recent exponential growth of Waldorf Schools globally over the last decade attests to similar motivations. Their early education philosophy is based on theories of mystic and architect Rudolf Steiner that privilege spirituality, empathy, and social adaptivity through traditional means, while deemphasizing the early use of technology. Although not without controversy, these schools have grown in response to perceptions of the relative alienation of contemporary society, preferring to reconnect with traditional arts to build the future.[3] Radical and cautionary examples further guide design toward alternatives. Famously rendered devoid of the preexisting, spatial context, and human occupation, the architecture of Sant'Elia presents a referential vision of *tabula rasa* design and its imposed results. More recently, technological and social caution and balance have become recurrent themes. For example, prominent thinkers Elon Musk, Steve Wozniak, Noam Chomsky, and Steven Hawking have pondered the potential existential danger of unlimited artificial intelligence and autonomous weapons in military applications.[4]

Responsive to this broader historical and theoretical context, the discipline of interior architecture philosophically and spatially represents a critical path between the hindrance of stagnant nostalgia and the brazen aggression of the naked future. In an era of increasingly extremist sociopolitical and spatial realities, interior architecture is uniquely poised to offer an alternative perspective of balance between past, present, and future aligned with the dichotomy of traditional vs. progressive. The design tactics of sustainable adaptive reuse, an embrace of the contextually preexistent, intervention by interior spatial installation, and technological innovation through fabrication and material combine the physical past with the newly

introduced present. This modus operandi enables the discipline to manifest its philosophy and relevance to realities, while offering various emergent opportunities as our society and environment experience profound change.

Productive shifts and infrastructural opportunism

As the inevitable inverse of industrialization, deindustrialization provides extensive opportunities for interior architecture and its allied design disciplines to respond to the increasing availability of *post-industrial* space. Beginning in the 1960s, the fundamental shift in Western societies from a production to a service-based economy simultaneously created social and environmental trauma, as well as spatial obsolescence. With a current estimate of over 500,000 brownfield sites in the United States alone, at a variety of spatial scales, the adaptive reuse of post-industrial spaces is an acute design issue of the contemporary era. As urban environments continue to densify and greenfield sites become increasingly scarce or undesirable from socioeconomic and environmentalist perspectives, vast potentialities present themselves for responsive therapeutic design. The means and methods of interior architecture balance these needs, while capitalizing on industrial, historical, and cultural inheritance. Landscape architect Richard Haag provides support to the idea of spatial therapy in the face of traumatic change, stating in 1982 with regard to his innovative Seattle Gas Works Park project (1975), "I accepted these gifts, and decided to absolve the community's vindictive feeling toward the gas plant. This vanishing species of the Industrial Revolution was saved from extinction through adaptive reuse."[5]

As spatially oriented disciplines, both landscape architecture and interior architecture demonstrate the potential of engaging postindustrial environments to enable a nuanced approach that embraces existent tradition and progressive innovation. From the "urban archaeology" of James Corner's High Line (2009) to Vienna's massive Gasometer City (2001), post-industrial environments have represented valuable opportunities to creatively and innovatively engage the existing. The rehabilitation and retention of the

existing context, both physical and spiritual, are the hallmarks of design disciplines that balance a variety of interests and temporalities, while undergoing deep-seated and often traumatic social change.

Consumptive crossroads

The continual restructuring of contemporary consumptive patterns represents a profound challenge to society, the economy, and space. Fundamental changes in retailing have occurred inclusive of a shift of consumers to shopping online, declining overall consumption levels, and a shift from physical to digital goods inclusive of 3-D printing at home. These conditions have created a large supply of underutilized commercial space in our urban landscape, embodied by the closure of countless major and minor retailers in the last decade. These activities reveal the emergence of a potential "post-retail" reality. An estimated one billion square feet of retail/commercial space is currently vacant in the United States alone, evidenced by environments marked by obsolete malls, big box stores, and strip shopping centers. Traditional retail environments in the context of the United States have been and will continue to be in steep decline.[6] The inherent strategies of interior architecture enable potential responses to this crisis. Simultaneous to its decline, this unfolding "post-retail" era has opened up a variety of new design opportunities for spatial reuse and reinvention by means of interior architectural practices.

The reinvigoration of obsolete retail and commercial spaces through adaptive reuse has the potential to bring these environments back to social and economic relevancy, reconnecting the preexisting and historical with new purposes. Architect and social theorist Victor Gruen envisioned the essential importance that retail space would achieve in the post-war American (and eventually global) consciousness, with the regional shopping mall described by him as "the Heart of the City."[7] Building on Gruen's innovative designs, for post-war America the mall became a social center and cultural icon deeply ensconced in national identity via spatial form. Invoking Gruen's original ideas, Rem Koolhaas chose to engage shopping as

the essential means to understand urbanity in his *Projects for the City* series. He proposes that retail spaces remain profoundly important to the city despite the emergence of the "dead mall" condition.[8]

In the midst of a profound and critical change, the reinvigoration of obsolete retail space is an interior architectural exercise that can transcend simple adaptive reuse and inspire critical perspectives on social history and heritage. The reinvention of post-retail space is a vibrant contemporary issue that remains grounded in the shared history of the past, considering new needs with retrospective meaning. Underutilized retail sites have already been transformed into civic, municipal service, healthcare, education, and other spaces. An example of the direct expression of the ongoing change from physical retail to digital activity is the proposed adaptive reuse of Sears Auto Centers, discrete retail pad sites often located next to "dead malls" that are spatially and infrastructurally ideal for interior redevelopment, by Ubiquity Critical Environments, as internet data centers.[9] The adaptive agency of interior architecture allows for a more nuanced response that enables economical, sustainable, and historically contiguous environments for potential futures.

Digital directions

As we proceed further into the twenty-first century, newly emergent digital technologies are transforming the spatial expectations of our environments. Beyond the post-industrial developments at the end of the previous century, further shifts illuminate the dichotomy between the physical and the digital, with the increasing presence of a "post-analog" reality. In a world that prioritizes time as a premium, fundamental changes in consumptive and productive patterns are leading to a deprioritization of the physical – profoundly changing social conventions and representing an existential crisis for architecture. New technologies, such as consumer level 3-D printing, geospatial mapping with GPS, autonomous aerial drones, and virtual reality, have already begun to impart a profound shift in perceived necessities and the role of the physical, as well as a general reassessment

regarding need for physical space. New generations that identify with internet-based identities demonstrate a growing preference for online personas that are both spatially and perceptively virtual – fundamentally redefining the very idea of "space" and buildings. Mobility, efficiency, and transportability enable the search for increasingly fleeting economic opportunities, further distancing the connection with the physical. In this current environment, designers are being presented with a challenging reality that raises fundamental questions about the role of physical space. This new charge provides for innovation and fresh opportunities that interior architecture is naturally poised to envision and mobilize.

Figure 4.2 Victor Gruen – Brookdale Center, Minneapolis MN USA, 1965 (Demolished 2011)

Image credit: author (2009)

As critical questions emerge about the nature of the exclusively physical, interior architecture again uniquely offers potential design strategies for response. Inherent to interior architecture is its application of technological innovation, particularly through digitally produced fabrication of interior installations and the application of advanced material specificity at a level which is often not realized in other design disciplines. Building on the ideas of media theorist Marshall McLuhan, architect and materials expert Blaine Brownell discusses the idea of "disruptive application," where conventional solutions are unexpectedly replaced by new ones leading to innovative and advantageous developments.[10] The contemporary shift from the physical to the digital, as well as the critical interface of interior architecture with fabrication and material design strategies, represents this disruptive potentiality. As we transition toward an increasingly digital future from the physical past, in both occupancy and fabrication/construction, the blended coexistence in both realms has become typical. Interior architecture presents a perspective where other forms of spatial hybridization have been the norm, and it is ripe for the disruptive application of digital technologies fomenting innovation and advantage.

The translation of spatial installation and material innovation by digital means has begun to manifest itself on a larger scale with the development of consumer-level augmented reality. Currently utilized by first-generation prototype products such as Microsoft's HoloLens and Google's Glass, augmented reality projects hybridize and amalgamate the preexisting context with new spatial installation. Unprecedented applications of hybridized digital/analog space, no longer solely defined as adaptive reuse by existing context and new installation in the solely physical sense, reveal an emergent potentiality in augmented reality and interior architecture that is neither alien nor outside the normative practices of the discipline. The vision of augmented reality to hybridize imposed digital and existent analog space, and even the past/present/future via their dynamic combination, can be enabled with strategies of interior architecture as a bridge between these worlds. As technologies and the discipline move

toward the future, augmented reality represents a realm of possibility and potential offering solutions to ongoing change.

Interior architecture as therapy

Current technological and social changes represent both powerful possibilities for innovation and fundamental disruptions of our traditional means of living. They are deeply impacting the social, economic, and spatial realms. As a means of navigating this profound change, the historical strategy of connected relationships between past and present was essential in discovering a successful path to the future. The critical amalgamation of past, present, and future by means of interior architecture holds the potential to establish how space can serve as a means of addressing and stabilizing our contemporary conditions.

Through a discussion of three varied contemporary crises/opportunities of the post-industrial, post-retail, and post-analog, this chapter proposes how interior architecture and its strategies and philosophy of spatial therapy demonstrate a critical potential to respond to some of the greatest current challenges facing society via design. Interior architecture represents a path of balance between stagnant historicism and brazenly radical futures. Extending beyond just space, the ideas of interior architecture are an inherently social act that enable meaning and resilience. Interior architecture is a unique and powerful philosophy where history, theory, and design unite to position it among the most relevant design tools in a time of profound and disruptive change.

Figure 4.3 Microsoft HoloLens Minecraft Augmented Reality

Image credit: Microsoft Sweden (2015)

Notes

1 Daniel Bell, "Ch 2: Teletext and Technology: New Networks of Knowledge and Information in Postindustrial Society" (1977), in Daniel Bell, *The Winding Passage: Sociological Essays and Journeys* (London: Transaction Publishers, 1991).

2 Ray Kurzweil, "This Is Your Future", *CNN*, www.cnn.com/2013/12/10/business/ray-kurzweil-future-of-human-life/ (last modified 26 December 2013).

3 Emily Chertoff, "Is This Grade School a Cult? (And Do Parents Care?)", *The Atlantic*, www.theatlantic.com/national/archive/2012/11/is-this-grade-school-a-cult-and-do-parents-care/265620/ (last modified 30 November 2012).

4 Michael Rundle, "Musk, Hawking Warn of 'Inevitable' Arms Race", *Wired Magazine*, www.wired.co.uk/news/archive/2015-07/27/musk-hawking-ai-arms-race (last modified 27 July 2015).

5 Peter Reed, "Beyond Before and After: Designing Contemporary Landscape", in Peter Reed, *Groundswell: Constructing the Contemporary Landscape* (New York: Museum of Modern Art,

2008), p. 25.

6 Richard Reep, "The Future of the Shopping Mall", *New Geography*, www.newgeography.com/content/00501-the-future-shopping-mall (last modified 31 December 2008).

7 Victor Gruen, *The Heart of Our Cities – the Urban Crisis: Diagnosis and Cure* (New York: Simon and Schuster, 1965).

8 Rem Koolhaas, ed., *Harvard Design School Guide to Shopping: Project on the City Volume 2* (New York: Taschen, 2002), p. 202.

9 Shane McGlaun, "Report: Sears May Convert Some Auto Centers Into Data Centers", *DailyTech*, www.dailytech.com/Report+Sears+May+Convert+Some+Auto+Centers+into+Data+Centers/article33760.htm (last modified 15 November 2013).

10 Blaine Brownell, *Material Strategies: Innovative Applications in Architecture* (New York: Princeton Architectural Press, 2012), p. 9.

Chapter 5

Inside out

Michael Webb

It is quite evident in most buildings that the surfaces should be considered as belonging to both the interior and exterior. In some of modern architecture's weirder moments, however, this distinction is not quite so evident. Take the early design sketch that Le Corbusier made for the villa at Garches: it purports to show a large double-height interior space. But is it? What is that little squiggle in the middle of the ceiling that looks like a bird? If it *is* a bird, it's a somewhat inept representation of one. But if we are looking at the sky and not the ceiling, does that make it an exterior space? Was this little sketch a progenitor of James Tyrrell's famous ceiling at PS1 in Queens NY, a grand illusion shattered not by a bird but by UA 3245 making its final approach into LaGuardia Airport flying well below 35,000 ft.?[1] Is that not a manicured lawn in Monsieur de Bestegui's Parisian roof garden? If so, it must surely be an exterior view. Or is it a carpet, in which case it must be an interior view? In one of the projects that SITE did for Best Products, the enclosed volume of the big box store shifted sideways off its base, so that many of the items for sale displayed in the sales area find themselves out in the open. SITE's work represented the *ne plus ultra* of architecture for disaster movies.

With regard to the notion of interior architecture, let me now take another breath and describe two examples of my own work so that the above quoted masters and I are not mentioned at once. First, an unfinished oil painting of the Henley regatta: The landscape depicted in the painting (Figure 5.1) is that of the regatta course at Henley-on-Thames; namely, the volume of air, land, and water enclosed by a perspectival cone of vision, whose axis is parallel to the rowing lanes of the course, and whose apex is in the Cyclopean eye of the beholder.[2] Nearby, in 1862, during "a leisurely glide on the river all in the dreamy weather of a golden afternoon" did the Rev. C.L. Dodgson, accompanied by Robinson Duckworth, first tell the Liddell girls of the Cheshire cat, et al.?[3] I have allowed myself the notion that the air within the cone has magically solidified. It can thus be removed from the overall landscape and examined independently like an ice core. By this move, though, the contents of the cone become components of an interior space and the wall of the cone a window to the nothingness beyond. My easel is in a location other than that of the beholder. Depicted in the painting, however, is only what the beholder can see, meaning that only objects within his or her purview are rendered. What lies behind those objects (behind in terms of the view from my easel) will appear as negative "shadows" radiating from the beholder's eye, voids slashing through the ice core and breaking through the exterior wall of the cone. If the beholder were to move, the voids would begin rotating like movie gala searchlights to create new gashes in the wall.

Figure 5.1 Michael Webb, *Orthographic combined/compressed roof plan and elevation of the solidified. Henley-on-Thames regatta course.* Oil on prepared board. (2008–present)

The drive-in house

Some background material might be helpful before getting to the gist of the project that just about merits its inclusion. And that's what some of us in the UK felt upon reading Reyner Banham's 1965 *Letter from America*, his new land. To the folks back home, Banham praised not the sort of corporate modern architecture purveyed by the likes of Paul Rudolph, SOM, and I.M. Pei. No, he wanted to bring to our attention the automobile-induced vernacular of mobile homes and drive-ins that represented a radical change in the basic programming of a building. His book was quintessentially

American in its seeming response to the needs of the restlessly mobile society that we had all heard so much about. Of the drive-in movie house, Banham writes:

> Only the word house (theater surely?) is a manifest misnomer … just a flat piece of ground where the operating company provides visual images and piped sound, and the rest of the situation comes on wheels. You bring your own seat, heat and shelter as part of the car. You also bring Coke, cookies, Kleenex, Chesterfields, spare clothes, shoes, the Pill, and god wot [sic] else they don't provide at Radio City.[4]

Or, "the smoochy couple dancing to the music of the radio in their parked convertible have created a ballroom in the wilderness (dance floor courtesy of the highway department)." This latter vision of rapture in the wilderness presumably dissolves when the couple return to their car and the dance floor turns back into a length of highway … and silence replaces the sound of music. We now know what a drive-in movie theater or dance hall looks like … a flat piece of ground, etc., but what might a drive-in house look or behave like? Maybe this is a drive-in house (Figure 5.2).

Figure 5.2 illustrates a horizontal section cut through a house (shown here by its sectioned spherical roof with rudimentary floor beneath). The purpose of the drawing was solely to explore the mechanics of how a car might be rotated into the house (via an intake tube) while at the same time maintaining seals that would prevent hot or cold external air from entering the house. At the time of the drawing's execution, the design of the house itself had not been considered and is therefore depicted in rudimentary form. Solid material cut through is shown in grayscale. The house is nestled into the side of a hill.

The drawing is tripartite, comprising sequential images numbered one, two, and three – in dutiful compliance with that convention of architectural representation which requires placing the main entry of a building along the bottom edge so that our eyes can enter "up" into the

drawing. Here, our eyes must be usurped by the driver's Cyclopean line of sight, his center of vision, which is likewise "up" in all three phases, meaning that the building must rotate around the driver, rather than the driver around the building. By such faithful adherence to the conventions, the original intention was to aid readability.

In part 1, the car has been driven through the intake tube into a clockwise rotating drum. The driver's center of vision remains steadfastly vertical. A curving yellow line marks the path of the sun across the spherical roof. In part 2, the drum has rotated further, the volume of air contained within the drum warming or cooling to the internal temperature of the house. The driver's center of vision remaining steadfastly vertical, the intake tube and the room must therefore follow and swing round. In part 3, the drum has rotated yet further so that its internal walls now align with those of the house. The car has become the gorgeous object within.

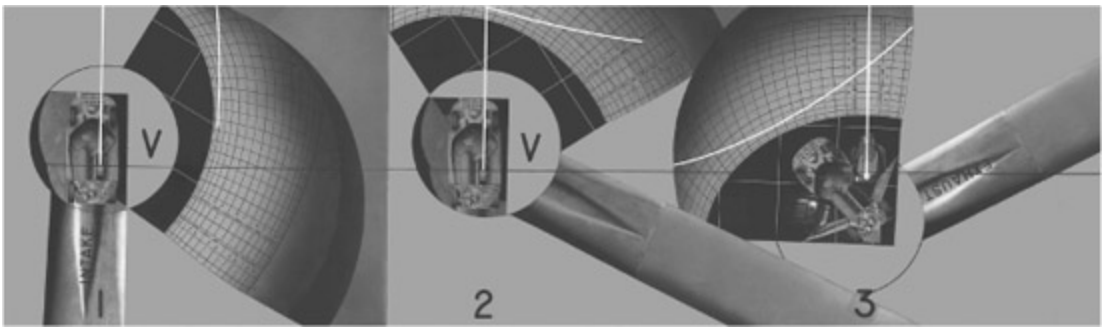

Figure 5.2 Michael Webb, *Drive-in house. Horizontal Section Cut. 3 phase depiction of the rotation.* Airbrush, Color-Aid paper and Solar Path diagrams. (1995)

The operational geometry of the drum was an attempt to emulate – albeit at a giant scale – the Wankel engine's ingenious rotational harmonies; hence the term "intake" or "exhaust" with the car itself playing the part of the gas and air mixture. The analog only takes you so far! Figure 5.3 represents a work in progress although, as you can see, the word "progress" is what this drawing has not achieved. The mechanism is more compact, and as a result, the rotating car and its concomitantly opening doors seem (and *seem*, here, is the operative word) to sculpt a shape which is

a negative of the car from the solid material of the house. The interior walls of the house, then, are a distended negative of the car exterior. The outside is the inside distended, and thus, results in an *interior* architecture.

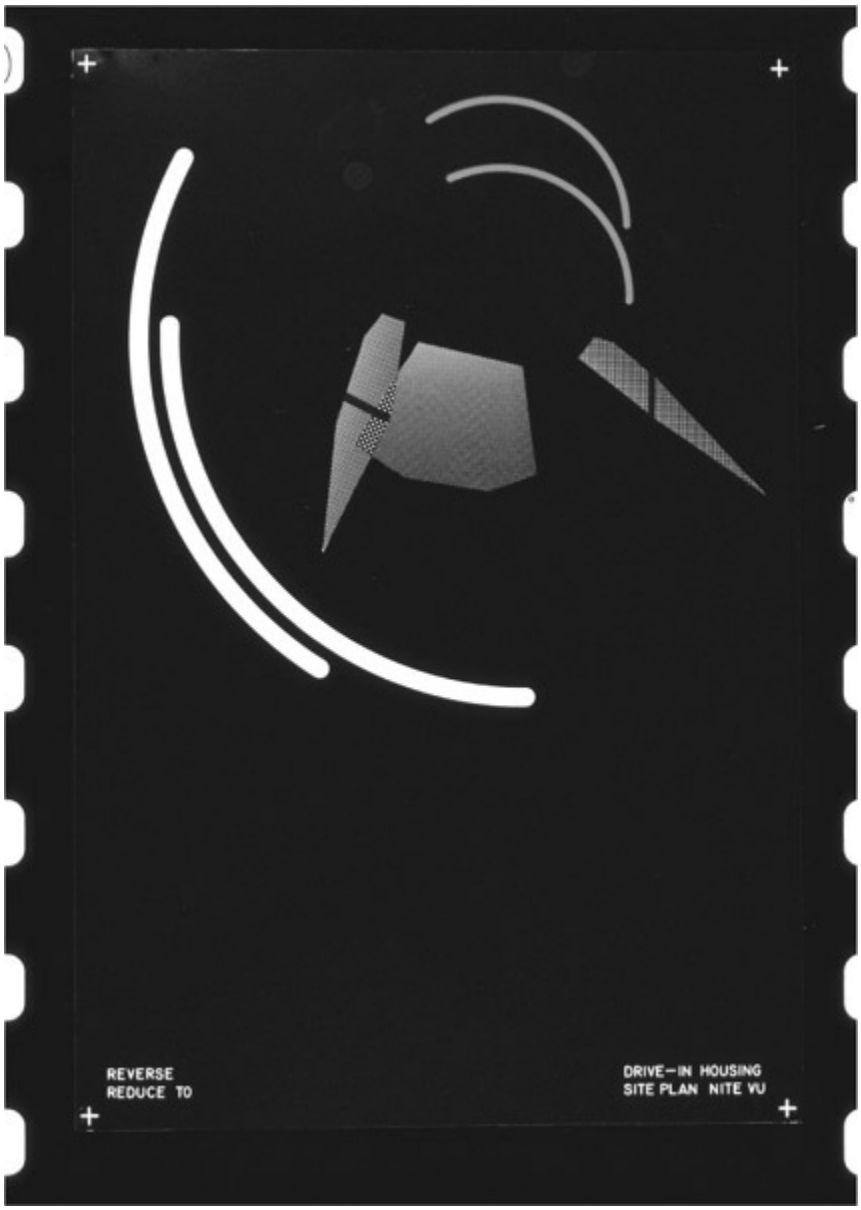

Figure 5.3 Michael Webb, *Drive-in house. Roof Plan at night.* Photostat with added Pantone color. (1985)

Notes

1 The airliner's ceiling, while invisible, is very much an actuality … so is Tyrell's ceiling.

2 The cone has been sectioned horizontally, thus making its top surface a parabola.

3 Taken from the prefatory poem that begins *Alice in Wonderland*.

4 The smart, self-driving car (rentable version only): drive it, leave it at the entrance to J.C. Penney and there's another waiting for you when you exit … sure … after a 10 minute wait … at least has the potential for eliminating those pressed metal deserts more completely than ever the drive-in could.

Part two

Territories

Chapter 6

Symbiotic spaces

Decolonizing identity in the spatial design of the Museum of Macau

Emily Stokes-Rees

This chapter considers the narrative character in the Museum of Macau (MoM hereafter) and its potential to demonstrate how museums can use spatial configuration as a way of shaping knowledge and history. Dvora Yanow, Professor of Organizational Studies at Keele University in the UK, has studied museum buildings as narrative spaces. Her central thesis is that buildings – museums in particular – are both storytellers and part of the story being told; the museum is both a house of material culture and an artifact itself. It presents itself to be read and deciphered as an integral part of the narrative alongside the displays. Echoing Yanow's position, this chapter employs the idea of symbiosis, pointing to the mutually beneficial coexistence of unlike organisms – a synergistic relationship that might result in the emergence of a new species.

Symbiosis can also be used as a model for the mutual relationship between the idea of the museum, its nation of origin, its building, and its

narrative; each benefit from the relationship. This chapter posits that the give and take between form and function in the MoM and its building reflect the extent to which the museum's building and story are inseparable, and that Macau's unique identity is inextricably linked to its colonial history. The architecture, both exterior and interior, is not subservient to the museum's content and message, but rather, acts as a protagonist in the communication of symbiotically framed ideas about the past and the present, form and function, colonial and postcolonial, and East and West.

National museums, like all built structures, exist on many levels. We encounter them first as built form in the physical landscape, and then, as one enters the building, as spaces of exhibition. Public spaces, like museums, are also inherently tied to community, being both spatially anchored and symbolically constructed. As architect Tan Hock Beng has claimed, "Buildings remain a space for the formation of identities. This, architecture achieves through the relationship between buildings and the people who question how and why they come to be."[1] Lawrence and Low (1990) echo this sentiment in their description of the built environment as:

> tangible evidence for describing and explaining the often intangible features of expressive cultural processes… . As expressions of culture, built forms may be seen to play a communicative role embodying and conveying meaning between groups, or individuals within groups, at a variety of levels.[2]

In other words, the physical space of the museum can be seen not simply as a lifeless container to hold objects and visitors, but as a dynamic participant in the interpretation of culture and the experience of identity. At the same time, the organization of the built environment affects the people who experience it – their feelings, behavior, and relationships with others.

Throughout history, the museum has been an "emblem of Western cultural tradition, [a] formative tool of modernity, a means to reconfigure colonial pasts" and a lure for tourists.[3] As Douglas Davis has put it, "no building type can match the museum for symbolic or architectural

importance."[4] Tony Bennett, for example, examines the political uses that governments have made of museums as sites for social reform, carefully constructed public spaces through which state objectives can be achieved.[5] He describes museums at the turn of the twentieth century as monumental institutions built to simultaneously represent enlightened thought, political unity, and evolutionary continuity. The imposing facades and entrance halls of many museums were designed to be inspiring and uplifting (perhaps intimidating), their internal layouts echoing the discourses of science, culture, and power presented within.[6] Resembling historic ceremonial monuments, their architecture was comparable to Greek or Roman temples, cathedrals from the Middle Ages, or Renaissance Palaces. Not only did their architectural characteristics make these historic museums reflect ancient sites, their settings also emphasized the building as a site of contemplation and learning. To this day, museums are often set apart from other structures, approached by an imposing central flight of stairs, or set back from the street and nestled into parkland. In constructing buildings in this style, a ritual process is experienced by visitors to the museum: the climb up to the door feels like entering a church or cathedral, for example, and individuals are, therefore, psychologically and culturally prepared to respect the "civilizing rituals" of museum visiting.[7] Traditional museums like the Smithsonian or the British Museum immediately spring to mind, where temple-like architecture sustains the image of the national museum as a spiritual repository representing all human achievement.

While the traditional form of the museum has continued to be an important feature in many nations throughout the twentieth century, it has also acquired several new roles. Michaela Giebelhausen's edited volume of essays explores, for example, the ways in which the modern museum building helps to "unlock urban memories [and make] visible the city's hidden histories."[8] She cites the example of the Centre Georges Pompidou in Paris (1977), which was conceived not simply as a museum, but as a multipurpose cultural center designed to "enliven the city."[9] Other museums have taken on more commemorative roles, and still others are the products of urban regeneration projects, reusing abandoned or neglected landmarks

and transforming them into new museums. As Giebelhausen argues, "The museum building again is being conceived as an evocative entity that is in dialogue both with its content and urban context."[10]

When such expressions of identity are influenced by postcolonial politics, this task becomes increasingly complex. Lawrence Vale has noted that in states liberated from colonial regimes, building design has been used as "an iconographical bridge between preferred epochs, joining the misty palisades of some golden age to the hazy shores of some future promise."[11] In other words, architecture in a postcolonial context can play an important role in the enforcing of political control, often under the guise of creating a "national style."[12] Whether one believes the destruction of physical traces of colonialism will alter the history of the nation, or whether one chooses to build upon the memories of that past through the reappropriation of colonial buildings, the construction of new museums remains an important debate in many formerly colonized nations.

Macau and its museum

Macau is a small "special administrative region" on the southern coast of China, to the west of Hong Kong across the Pearl River Delta, bordered by Guangdong to the north and the South China Sea to the east and south. With an estimated population of around 636,200 living in an area of 30.3 km^2 (11.6 sq. mi.), it is among the most densely populated places in the world. Macau was administered by the Portuguese from the mid-sixteenth century until December 20, 1999, when, as the last remaining European colony in Asia under Portugal, sovereignty over Macau was transferred back to China.

The Museum of Macau occupies the Fortaleza Sao Paulo do Monte, otherwise known as the Monte Fortress. Built between 1617 and 1626, the Monte Fortress formed part of a complex of buildings, including the Sao Paulo Church and the Jesuit College, which has often been referred to as the "acropolis" of Macau – the symbolic and (almost) geographical center of the city.[13] Prior to 1623, the entire complex was controlled by the Jesuits, but in that year, when the first *Capitao-General* arrived in Macau, he took

possession of the fortress, which subsequently served as the Governor's official residence and the center of Portuguese political and military power in the territory.[14] The fort thus became the heart of the original Portuguese settlement. Later, it served as a barracks, a prison, and, since 1965, a meteorological observatory and public park. Its central location as well as its historic importance indicates that the fortress has been an important part of civilian life throughout history.

Consider for a moment, therefore, the risk (or perhaps the irony) of making a Portuguese fortress the location for a museum whose aim is to tell the story of interethnic harmony and tolerance that characterizes Macau. In interviews with museum staff and government representatives during a field visit there not long after its opening, it was impressed upon me over and over that the designers desired to highlight the problems of building a museum as a reflection of the problems in building a postcolonial identity for Macau. Local architect Carlos Bonina Moreno believed the location and historic significance of the fortress met all the optimal conditions for the museum site; however, he observed two problems which are chronicled in detail in the museum's publication entitled, *A Museum in an Historic Site: The Monte Fortress of St. Paul* (1999). The first hurdle was accessibility. Like all good military fortresses, it is strategically positioned atop a large hill with steep cliffs and commanding views over the city. As Moreno put it, "After all, it's a mountain. If people have to climb up the hill and get all hot and exhausted trying to get there, they won't come. We wanted to make it easy for people to come."[15] Second, and more problematic, the fortress consisted mainly of walls and turrets, with only one small, single-story building. As a result, it did not actually have any structures to sufficiently house a museum of the size envisioned. The question thus became focused on how to go about creating a space large enough to accommodate 1,500–2,000 square meters of exhibition space that would not risk harming the historic fabric and ambience of the fortress and that would be easily accessible from the Sao Paulo ruins and the street below.[16]

The solution lay in incorporating the building directly into the museum's story; its physical characteristics and structure have determined

the narrative logic of the exhibition space. The completed museum comprises three floors, two of which were excavated within the fortress walls, and one standing above ground (Figure 6.1). The main entrance to the museum is thus underground, accessible by a series of escalators which carry approaching visitors in and up to the lobby area, flanked by a large mural sculpted out of Portuguese marble portraying Macau's history. Once in the entrance hall, there is an expansive stretch of colonial arches in cream and white running around the original walls of the fortress (Figure 6.2). With the building elements adjusted to fit within the existing historic structure on the site, the museum remembers its past while at the same time looking forward as a modern proactive cultural institution.

Moving from the entrance hall and into the galleries, the MoM's exhibits have been arranged within the structure of the building to describe the nation's progress from distant past to recent past. Reflecting this plan, the museum is divided into three major sections, corresponding to the three floors of the building: Genesis of the Macau Region, Popular Arts and Traditions in Macau, and Contemporary Macau. Each of these sections is then divided into thematic areas. Moving through the museum, the visitor is drawn along a set path, picking up elements of the story by stopping at the vignettes along the way. The extent to which this kind of predetermined route is enforced upon visitors is described by Bennett as part of an "exhibitionary complex" – an efficient and disciplinary way of getting visitors to internalize meanings. He describes early exhibitions in which the world was staged for British consumption; visitors to these museums, he says, proceeded along directed routes, devised "to comply with a program of organized walking which transformed any tendency to gaze into a highly directed and sequentialized practice of looking."[17] In this way, the museum building, through its spatial layout, organizes time and ideology within its walls.

Figure 6.1 The third floor of the Museum of Macau – the only part of the building that appears above ground

Image credit: E.S-R (2002)

Figure 6.2 Reaching the top of the escalator which carries visitors through the foundations of the fortress into the museum's entrance hall

Image credit: E. S-R (2002)

Contributing to the effect of movement through history, the MoM uses the concept of "time traveling" by displaying its prehistory in a tunnel-like passage, a technique more and more frequently used in new museums.[18] As one enters the museum and travels along the length of the opening hall, the corridor narrows perceptibly, bringing (both physically and symbolically) representations of Western and Chinese civilization – displayed on opposite walls – closer together in space, through time (Figure 6.3). They do not physically meet, but converge in the gaze of the viewer upon a video box centered on the far wall, with red holographic writing that reads, "MACAU." In this way, the physicality of the entrance hall sets out the main representative strategies of the museum. First, it establishes symmetry between East and West, an important theme in the construction of Macau's postcolonial identity. Second, it demonstrates, through its parallel

comparison of developments in philosophy, writing, mathematics, empire, religion, and technology, that China and Europe are equally civilized and cosmopolitan. Lastly, it initiates the museum's main narrative of Macau as the product of the "inexorable encounter between these two monolithic culminations of four thousand years of history."[19] As Director Teresa Fu Barreto commented to me on the Project Team's initial vision:

Figure 6.3 Introductory exhibition hall in the Museum of Macau, with European material on the left and Chinese material on the right. Depicting the parallel development of European and Chinese civilization is important in constructing Macau's postcolonial sense of identity.

Image credit: E.S-R (2002)

> They wanted to choose bits from the Chinese way of life and the Portuguese way of life and show how the two blended and balanced to live in a peaceful way. They didn't want to talk about different versions of this history or different opinions … so, the museum reflects this throughout the building.[20]

Thus, this introductory gallery has the effect of bringing objects from different cultures and time periods together to convey a message of Macau's history as a product of the convergence of two great civilizations. It highlights the theme of cultural flow and symbiosis carried through the rest of the museum.

This type of exhibition reinforces the passage of time; it is a *long* history, and it is a history that has steadily and linearly progressed through time, reminiscent of Smith's observation that "the central idea of modern society is that of progress, because modern, industrial society lives on and is sustained by perpetual growth."[21] The physical structure of narration is characterized by interiority and the progression from a beginning to a finishing point, calling attention to the performative acts of moving and viewing, of the ordering of one's experience of history as a continuous, unified story. Through the spatial construction of the narrative, the relationship between the prehistory of the nation and modern, developed Macanese society is interpreted as "natural" – a past in symbiotic relation to the present.

In the transition from the first to the second floor – further illustrating the symbiotic relationship between structure and narrative – a passage was built through an intermediate mezzanine floor where a historic street scene is recreated. Here, the exhibits were adjusted to incorporate existing interior architectural elements of the fortress, such as an old cistern uncovered during the excavations, which has been restored and fit into an exhibit recreating the environment of Macanese fishermen. In another area, the displays incorporate original fortress walls, linking past to present and adding to the narrative of Portuguese/Macanese "cultural symbiosis."[22] What is on or separated by the walls is less important than what is occurring within the museum's spaces; the architecture is not a passive entity but something of constant notice; the fortress is as much an artifact of the narrative the museum articulates as any other object displayed within. The effect of these techniques is also to turn the gallery into a parallel in situ archaeological museum, and the building itself becomes an integral exhibit object. The juxtaposition of colonial history and postcolonial present –

respect for colonial spaces adapted for museum use after independence – thus becomes instrumental in redefining the nation. The museum is symbolically intertwined with the fortress and hill, becoming a unique and powerful blend of interior and landscape.

This cultural symbiosis of form and function is carried through the displays with representations of symmetry between East and West. In one gallery, a Portuguese and Chinese cannon stand side by side, and between them a pile of stone cannonballs that could be used in either one. In another area, an explanation of the symbolism of the nearby Sao Paulo Church's facade emphasizes its bicultural imagery and that it was a cooperative effort between the Western Jesuits who designed it and the Eastern craftsmen who built it. A text panel about the church reads:

> There are statues of the Virgin and saints, symbols of the Garden of Eden and the Crucifixion, angels and the devil, a Chinese dragon and a Japanese chrysanthemum, a Portuguese sailing ship and pious warnings inscribed in Chinese.[23]

This parallel structure, which is apparent throughout the museum, emphasizes the historical process of the meeting between two separate but equal civilizations and Macau's role as an active generator of new cultural forms. Elsewhere, displays on religion make reference to the female religious icons of Tin Hau, Guan Yin, and the Virgin Mary, each occupying a sacred space in their respective religions, binding the three faiths into one common experience.[24] As a place with which we can examine the relationship between the construction of the past and the spatialization of public memory, the MoM functions as both product and producer. It redefines old spaces as new, represents changing cultural practices, and creates new identities.

In her book on visual methodologies, Gillian Rose asks, "just how effective are these disciplining technologies?"[25] She argues that many studies of museums "concentrate too much on the disciplining effects of institutions and not enough on the way [they] … may fail or be disrupted."[26] Although I

was unable to speak to more than a handful of visitors in detail about this, as I sat on numerous occasions watching people move through the museum, it became clear that some visitors seemed to be drawn to certain areas by something that caught their eye, rather than the greater narrative of the exhibition. I also observed children making use of the space as a maze, running and playing "hide-and-seek" rather than treating it as a display of interesting information and objects. From these few observations, I would argue that for the most part, while the museum's layout cannot guarantee a specific response in all visitors, and while the unusual behavior I observed could perhaps be interpreted as symbolic of a struggle against hegemonic history, the museum nonetheless privileges certain readings.

The literal and symbolic journey of historical progress finds its climax as one exits the museum onto the rooftop garden and an outdoor café. From here, the whole of Macau is in view, reinforcing the role of the museum as overseer and protector of this tiny city-state's heritage. Like other famous mountains in cities (Rome comes to mind, or Mont Royal in Montreal), high points are automatically places of iconicity. Locals can look out and see their houses, workplaces, and locales of their childhood. By virtue of the dignity of the location, its history, and its symbolic potency, the Monte Fortress was a natural place to build a museum that was supposed to "reflect the soul and spirit of Macau."[27] From inside out, the museum's design provides the visitor with opportunities to reflect upon the identity of Macau through its symbolically ordered space. History becomes a progression rooted in the past and moving forward and upward into the future.

Ever since museums first appeared as institutions, their architecture and interiors have been scrutinized; "praised and criticized in equal measure."[28] Their unique qualities have attracted the critical attention of cultural and architectural historians who have repeatedly tried to define and articulate museums' special characteristics. It has even been claimed that museum architecture's "cultural significance not only surpasses that of other building types, but also possesses a genuine seismographic quality."[29] Michael Levin, for example, considers the museum to be an instrument that

"almost by definition, does more than express current social values and tastes; it also makes a cultural statement which goes beyond its own place in history."[30] As such, history and identity lie not only within a museum's displays but are also reflected through its exterior shell. Whether modern or colonial, the museum building is an evocative typology in dialogue with both its content and its wider social-historical context.

In his book *How Societies Remember*, Paul Connerton suggests that it is within those commemorative practices involving some kind of participation, whether through ceremonies, rituals, or codes of behavior, that collective memories are produced and sustained among members of society.[31] Moving through the space of the museum in such a way, visitors – whether consciously or unconsciously – participate in the creation and maintenance of collective national identity. By controlling the path of movement, ways of seeing, and the objects and displays around which this vision is directed, museums acquire a special social authority. This chapter has highlighted observations of the strong links between location and narrative, form and function, architecture and interiority. The Museum of Macau and its architecture, in turn, reflect the extent to which the museum's story was conceived as a systematic whole and key site for postcolonial nation building. This discussion of exhibition techniques and dynamics has enabled a clearer reading of the institutional processes of display at work within the MoM. In addition to conveying knowledge, the visibility of some of the specific modes of display highlights the museum as a medium for the production of cultural identity, where "the museum itself is on display."[32] The MoM's use of spatial layout, for example, was shown to dictate a particular "path" through the nation's history, as well as its history as a place of exchange and cooperation.

Whether the MoM is ultimately successful in its presentation of Macanese history is beside the point here. The key idea that I wish to highlight is that through its spatial layout and aspects of its interior architecture, the museum's designers have attempted to present a certain "story," and therefore a particular image of Macanese identity. The narrative path of national history is controlled by the internal route one is encouraged

to take through the museum, revealing the very nature of the building's design as an active agent in constituting knowledge and experience. The museum in Macau uses spatial vocabularies and strategic sequencing, dioramas, and recreations to communicate meaning; a symbiosis between form and function, East and West, the past and the present. Emerging out of the mountain, the MoM becomes a condensation of the rich natural and cultural context in which it is located, where the rhythms of local life give rise to the exhibits. Resonating within the building, various design elements dovetail into relationship, blurring the boundaries between inside and outside, past and present, architecture and interiority, city and museum.

Notes

1 Tan Hock Beng, "Reconstructing Memories", in *Between Forgetting and Remembering: Memories and the National Library*, ed. Kwok, Ho, and Tan (Singapore: Singapore Heritage Society, 2000), pp. 67–75.

2 Denise Lawrence and Setha Low, "The Built Environment and Spatial Form", *Annual Review of Anthropology* 19 (1990): 466.

3 Michaela Giebelhausen, ed., *The Architecture of the Museum: Symbolic Structures, Urban Contexts* (Manchester: University of Manchester Press, 2003), p. 1; also Carol Duncan, "Art Museums and the Ritual of Citizenship", ed. Ivan Karp and Steven Lavine, *Exhibiting Cultures: The Poetics and Politics of Museum Display* (Washington: Smithsonian Institution Press, 1991), pp. 88–104.

4 Quoted in Giebelhausen, ed., *The Architecture of the Museum*, p. 2.

5 Tony Bennett, *The Birth of the Museum: History, Theory, Politics* (London: Routledge, 1995), p. 100.

6 Gillian Rose, *Visual Methodologies* (London: Sage, 2001), pp. 171–172.

7 Carol Duncan, *Civilising Rituals: Inside Public Art Museums* (London: Routledge, 1995).

8 Giebelhausen, ed., *The Architecture of the Museum*, p. 2.

9 Ibid., p. 6.

10 Ibid., p. 7.

11 Lawrence Vale, *Architecture, Power and National Identity* (London and New York: Routledge, 1992), p. 321.

12 Vale, *Architecture, Power and National Identity*, p. 53.

13 Both the Sao Paulo Church and Jesuit College burned down in 1835, and today only the facade of the church remains; Project Team of the Museum of Macau, *A Museum in an Historic Site: The Monte Fortress of St. Paul* (Macau: Museum of Macau, 1999), pp. 79–95.

14 Project Team of the Museum of Macau, *A Museum in an Historic Site*, p. 84.

15 Moreno quoted in Anastasia Edwards, "Macau's Rich Past Given a Future", *The South China Morning Post*, 17 April 1998, Weekend Entertainment Section: n.p. MoM museum clippings.

16 For a detailed description of the construction problems and process, see Project Team of the Museum of Macau, *A Museum in an Historic Site*, pp. 115–159, 162–172.

17 Bennett, *The Birth of the Museum*, pp. 186–187.

18 This can also be observed in history museums in Canada, Australia, and Hong Kong, for example.

19 Museum of Macau, museum text, 2002.

20 Barreto, personal interview, MoM, September 2002.

21 Anthony D. Smith, "History and Modernity", in *Representing the Nation: A Reader (Histories, Heritage, Museums)*, ed. David Boswell and Jessica Evans (London: Routledge, 1999), p. 46.

22 Project Team of the Museum of Macau, *A Museum in an Historic Site*, p. 150, 172.

23 Museum text, "Sino-Western Cultural Interchange", MoM, 2002.

24 Mary is the central female figure of Catholicism (Christian), Tin Hau is the Taoist Goddess of Mercy, and Guan Yin is the Buddhist name for the same figure.

25 Rose, *Visual Methodologies*, p. 183.

26 Ibid.

27 Cathryn Clayton, "Imagining Macau: Local Identities in Transnational Formation", PhD Thesis, University of California at Santa Cruz, 2001, p. 276.

28 Giebelhausen, ed., *The Architecture of the Museum*, p. 2.

29 Ibid., p. 2.

30 Levin quoted in Giebelhausen, ed., *The Architecture of the Museum*, p. 2.

31 Paul Connerton, *How Societies Remember* (New York: Cambridge University Press, 1989).

32 Barbara Kirshenblatt-Gimblett and B.S. Frey, "The Dematerialization of Culture and the Deaccessioning of Museum Collections", *Museum International* 54, no. 4 (2002): 59.

Chapter 7

Shape shifting

Interior architecture and dynamic design

Mark Taylor

The term *interior architecture*, as noted by Sashi Caan, has been around since 1924, but over the past twenty years it has gained new currency.[1] Since the early 2000s, interior architecture has been closely aligned to ideas of adapting existing buildings to contain new functions. Brooker and Stone established a conservationist approach that revolved around themes of preservation, restoration, renovation, and remodeling.[2] Their methodology aligned case studies with an analytical examination that sought coherence and symbolic association between the new and old parts of the building. While Brooker and Stone take a more rational approach to understanding the interior through materials, form, geometry, and so on, Caan recognizes that atmosphere, feeling, and spatial presence are factors affecting the perception of an interior. What might be called "interiority," which from its early inceptions in philosophy and latter preoccupation by writers, offers a connection to psychological life, memory, closeness, and intimacy.

In recent years, the relationship between interiority and interior architecture has been affected by advances in digital, electronic, and interactive technologies, particularly the way real-time interaction alters physical and psychological engagement with built space. The anthropologist Marc Augé's book, *Non-places: Introduction to an Anthropology of Supermodernity*, for example, provides an analysis of the "customer's" silent engagement with late-capitalist space.[3] Wandering through the reductively generated self-similar and homogenized "supermodern" space of supermarkets, train stations, and airports, "clients" are scrutinized, identified, and directed by sensors, machines, and card readers. Replicated indiscriminately across the globe, these spaces are the result of corporate capitalism, business economics, or plain "efficiency diagrams." By extending Augé's analysis, Stephen Graham and Simon Marvin argue non-places as "sites that are wholly constructed and controlled to support the mobility of global commodities."[4] This condition epitomized by "intense concentrations of networked infrastructure" construct what they and others regard as "supermodern" spaces of flow. The reality is that such spaces are often gated and controlled by barriers, ticket machines (as on subways), and directional paths that allow access by means of network cards that identify users.

In the prologue to his book, Augé identifies this terrain through a man's journey from the moment he draws money from a cash dispenser to the time he settles back to listen to the Air France in-flight music channel en route to Asia. The journey takes him from an ATM to Roissy airport via the Dourdan tollbooth, the A11 and A1 autoroutes, underground parking, and check-in desk where he books a smoking seat. Clearing passport control, he purchases duty-free cognac and cigars, then boards and settles into the new *Espace 2000* business class seat prior to takeoff. Flicking through magazines, he reads articles, advertisements, and reviews, before noticing the "fasten seatbelt" sign has gone out, and, finally, adjusts his earphones in order to be "alone at last."

Augé's ficto-character, the urban businessman Pierre Dupont, surrenders to solitary individuality, having navigated the spaces that advertised and encouraged the idea that "we are perpetually connected

when, in reality, we are profoundly disconnected."[5] This disconnectedness, suggests Bingham, results from "the overabundance of information and current events, as well as the acceleration of human life and history, but even more so in the proliferation of non-places, which are inherently impersonal and impermanent."[6] Dupont's connection to the airport, "Roissy, just the two of us!" is as ephemeral as the places and products in the advertising pages of the in-flight magazine. He has spent the day in the company of the ordinary, common, and impersonal space of an ATM, an airport, and a magazine's advertisement that connected his journey's start to finish through the word "Espace."

In this short passage, Augé recognizes that much of our time is spent using cash machines, traveling on motorways, wandering around supermarkets, waiting in airports and hotels, and interacting with TVs, game consoles, and computers. For example, the cash dispenser accepts Pierre Dupont's card and "told him he could have 1,800 francs [and] asked him to wait," before adding, "thank you for your custom." Although this exchange reads like a conversation, it is completed through a textual interface that allows Dupont access to his money. There is no "personal" interaction, though the passage reads much like a conversation between customer and bank clerk. Media and technology writer Gillian Fuller observes that these places tend to address participants and passengers through various modulated messages, such as "do not eat in the train," "find/lose yourself in Paris," "please present boarding pass and passport." These textually mediated modes of interchange provide rules that "address a virtual 'average man' subject to a series of silent exchanges and injunctions (turn left, insert card now, Welcome to Sydney), where contractual modes of interaction are sharply defined and textually mediated."[7]

Ole Bouman proposes that we are in an architectural age in which people, rather than place, become the interface with the ultimate aim of "merging digital and physical environments in a single interface."[8] He suggests the advent of ubiquitous computing and emergence of asynchronous structures challenges architecture as a device that measures specific events and moments in time. These ideas are embedded within his

own practice and curatorial efforts to produce architecture that adopts time-based technologies, including animated surfaces, interactive environments, and merged spaces with both real and virtual interface. In this world of social networking through remote sites, where "human behavior is no longer framed by place," architecture "will lose its position and character as a consistent and integrated form of cultural communication."[9] For architects and designers, this new way of thinking extends the work of Anthony Dunne and Fiona Raby, who also explore the links between the material and immaterial. Their research focuses on the poetic and sensual rather than the technical or utilitarian aspects of design, where pervasive computing is used to produce a more intangible or ephemeral interface design that makes visible the invisible or evokes immaterial sensuality.

Intelligent systems

In both exterior and interior spaces, media connectivity is having an important impact on domestic architecture, "resulting in spaces that are mediated yet somehow remote from our senses."[10] Weinstock argues that the home has become a *terrain vague*, lying somewhere between the digital and physical worlds, between the infinite extension of data worlds and the decreasing experience of personal space. Through utilizing distributed intelligence and responsive material systems, he suggests it should be possible to change "internal parameters and performances in relation to the life of their inhabitants and events in the external world."[11] Two examples are offered in order to frame a discussion of the domestic relative to non-domestic environments. The two examples, Aegis Hyposurface by dECOi and the Freshwater Pavilion by NOX, indicate how walls can interact spatially with the environment, either by physically responding to data as a deformable surface or by altering a virtual real-time model in relation to movement of people within the space.

The Aegis Hyposurface, conceived by Mark Goulthorp of dECOi Architects, is the world's first responsive architectural surface. It was designed as an interactive artwork to be located outside the foyer of the

Birmingham Hippodrome Theatre (UK). An array of sensors, such as video cameras and microphones, send data to a network of pistons that activate the surface in order to bring "Aegis into a conversation with whoever triggered a response."[12] It is a dynamically interactive surface, with significant surface variability, which Mark Burry once described as a movement that, at first, makes one feel a little seasick. Perhaps it is because the effect is so spatially disturbing, while questioning the seeming solidity of the Aegis Hyposurface's metal surface. There are, however, other surfaces such as tent canvases and soft skins that also have spatial variability. The temporary T-Room (2005) designed by Japanese architect Kengo Kuma for the Alternative Paradise exhibition held at Kanazawa 21st Century Museum, for example, utilizes an air-filled translucent membrane structure that was animated by variations in air pressure. This project, however, did not use stimulus/response networks to effect change, but operated on a movement cycle which nevertheless forced a more intimate relationship between bodies, as well as between body and architecture.

With this in mind, Weinstock suggests that "housescapes will require distributed intelligence and active material systems," and while these advances utilize digital technologies, some buildings have other forms of sensors that manipulate environmental conditions, but may not be regarded as "intelligent."[13] The question of building intelligence has been addressed by cyberneticist Ranulph Glanville, who observes that the oldest likely example is thermostatically controlled central heating (or cooling), in which the internal environment is conditioned by a sensor switch attached to a heating or cooling system. He suggests that once such systems might have been thought of as intelligent, but only when such "behavior seemed wondrous."[14] Relative to Turing's test for intelligence, Glanville concludes that these examples "perform tricks," since they do not offer anything that is remotely interactive, but are stimulus-response actions. Although the smart fridge that tracks products and offers menus is closer to an interactive device, it is not truly interactive and is probably closer to a servicing device. Glanville proposes that "the buildings and devices we currently have are nowhere near interactive, let alone intelligent. They are merely built to include clever

tricks that allow them to react, often in ways designed to retain a static stability."[15] Despite Glanville's observations, these new forms of interactive technologies, principally operating through the Web of Things, connect activation with performance. Reciprocal relationships between data input (stimulus) and surface change (response) are affected in many ways, not only through digital screens, but also through mechanical systems such as those used in the Aegis Hyposurface.

Network infrastructure

The means of achieving any spatial or environmental change, in real time, is dependent on how technologies are coupled to not only enhance our experience, but also how they reconnect space and time with the interior. Our presence in the physical world, which was once marked by seasonal changes of temperature and light, is now mediated by constantly unfolding data – whether this is through social media or technologically derived data (what we might call "big data"). This suggests that lives exist between digital and physical environments. Supportive technologies, such as the development of wearable technologies, also means that interaction with the device no longer need occur through graphic interfaces, but "through tactile and direct contact with the instruments located on the body."[16] Such advances mean that the artificial or constructed environment might reconfigure itself depending on the social dynamics that are occurring.

Whether we want to inhabit this world or not, what is clear is that the introduction of mobile digital and electronic technologies into everyday life, and the development of new materials and controllable structures, emphasizes the distance between inhabitable space as a fixed architecture and as a flow of information. Now capable of dialoguing with variable environmental conditions, including the emissions of sounds, smell, climate data, and so on, architecture is a complex adaptive robotic system of interacting installations. One example is the proposed Digital Pavilion Korea (2006) by ONL, the office of Kas Oosterhuis, in which the Voronoi cell structure of the pavilion was controlled and kinetically manipulated using

actuators in the beams of the structural system. This use of actuators operated in a similar manner to the earlier *Muscle* (2003) experiments by ONL, in which infrared motion and proximity sensors "detect people's movements in the surrounding area prompting the *Muscle* to react slightly, while touch sensors induce a stronger reaction."[17]

Given these developments, how might the interior respond to such challenges as ideas are transferred across domains, and how might these affect previous notions of interiority? Moreover, if the super modern interior continues to absorb technological innovations, it will cease to exist in its current format. This situation forces consideration of alternate locations, sites, and environments as potential receptacles for interiority and dwelling of the individual.

The technologically driven animate architectural interior that is not constrained by built form as the precursor to design intervention (in a Brooker and Stone sense) or fabricated in response to a psychological intent (in a Caan sense) offers a dynamic exchange that changes both form and feedback such that no single reading is possible. This mode of engagement with the built environment through information technology and connectivity is, as Ole Bouman argues, challenging the classical worldview of architecture as a static, built placemaking device. Under this paradigm, architecture is no longer about people engaging with built architecture or a place, but is about wireless embedded technologies that "reach you directly."[18] It is a form of architecture that questions the idea of timeless or classic architecture which, in a traditional sense, is conceptualized as the desire to represent oneself beyond the present. In a social sense, this recurrent process of time measured from the past through to the present anticipates a predictable future informed by stability. The data-driven environment, however, is inherently unpredictable, as its "stability" is ever changing.

To this extent, where monumental architecture has become the signifier of the ability to transcend death, because it seems to be eternal and claims durability and imperishability, the responsive environment has an immanent relationship to lived space that, if not "intelligent," is beginning to

collect data and respond to patterns of use within a real-time scenario.[19] Under this conceptualization, the relationship between interior architecture and interiority is dynamic and mobile, and ultimately aided by the inhabitant's response to the interior environment – and vice versa. As a means to structure social interaction, it "enables individuals and groups to sustain shared concepts of changes in meanings and values," such that "time" is now inherently bound to design thinking, in the manner that an entity establishes dynamic associations with its environment as well as within itself.[20] That is, it opens space for the transitory and transformative to resist traditional paradigms and ideologies.

Notes

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3 Marc Augé, *Non-Places: Introduction to an Anthropology of Supermodernity*, trans. John Howe (London and New York: Verso, 1995).

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6 Ibid., p. 25.

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9 Ibid., p. 21.

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11 Ibid., p. 50.

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Chapter 8

Politicizing the interior

Liz Teston

Interior architectural theory, particularly as it pertains to the political, is a relatively underrepresented – yet growing – area of inquiry. Of the approximately 195 Council for Interior Design Accreditation (CIDA) accredited programs in North America, only fourteen percent grant diplomas in interior architecture.[1] At an Interior Design Educators Council (IDEC) conference held in 2009, the status of programs that teach the design of the interior environment in the United States and Canada and the use of the name "interior architecture" was debated. Interior architecture, interior design, and architecture journals continue to publish papers on the topic.[2] Beyond a North American context, the debate over the nature of interior architecture continues, and with it, the potential for misunderstandings regarding territorial nomenclatures.

This chapter examines the role of politics in interior architecture through the work of Marc Augé and Guy Debord, an analysis of cultural theory borrowed from urban design and anthropology. By acknowledging the blurred edge between the territories of interior architecture and urban design, this chapter suggests that the interior is comprised of both spatial and political experiences. It recognizes that interior architecture is rooted in

the human experience of the interior volume. While the focus of this chapter is not professional legislation (the typical setting for defining disciplinary territories), a few definitions may help simplify classifications found here and set aside territorial questions about the varied design professions. This chapter focuses on place, space, and non-place as experiential drivers in contemporary interiors. Then, it examines how the Situationists International subverted conventional disciplinary research methods in the urban environment and how similar methods can enhance interior architecture. Finally, given that designers must appropriate political theories from allied fields, this chapter questions how interior architecture can stimulate new forms of community, political agency, and social consciousness across the disciplines.

Disciplinary geography: territories and frontiers

Interior architecture deals with designing places for people to occupy. By extension, those who design interiors focus on the human experience of the interior volume. Architecture is distinct from interior architecture due to its external and scalar characteristics. In addition, designers are more likely to employ formal exploration as a design strategy in architecture rather than in interior architecture where space is privileged. When we expand to the scale of the city, political and geometric forces often rule; the routes and paths of an urban grid meet the collective demands of designing for the public. If we step back to the scale of interior design, individual and aesthetic influences prevail, for instance, in the haptic textures, luminance, and ergonomic furnishings determining the characteristics of a reading nook.

It is possible, of course, for urban design to take on an individual, experiential quality and for the interior to adopt a politicized spatial condition. Some of the most innovative design work traverses the territorial membrane of these disciplines. Regardless, interior architecture assumes the importance of the human experience in the interior volume – how people activate space or how space activates people. A brief review of design award jury comments illustrates these varied disciplinary identities in the public

arena. The AIA Interior Architecture Award–winning Beats by Dre Headquarters by Bestor Architecture, for example, was described as "warm and inviting – a place where we would like to work. The design also seems to energize the staff in a relaxed atmosphere."[3] The account of IMG's Worldwide Offices by Studios Architecture in *Interior Design* magazine's "Best of Year" issue focused on materiality and furnishings. It describes "restored mosaic and terrazzo flooring that could serve as both background and counterpoint to an ultra contemporary museum – white walls and neutral-toned furnishings."[4] The AIA jurors valued the Beats by Dre Headquarters' spatial experience. The *Interior Design* magazine critics emphasized the placemaking aesthetics of the IMG Worldwide Offices.

Having defined both of these territories, we may now traverse them. A frontier is the outer limits or boundaries of a country, territory, or discipline. It could easily be misconstrued as a defined edge (Figure 8.1), but a frontier is, in fact, a liminal zone; it has thickness. We often assume there is a hard line between each design discipline, but in reality the defined edge is imaginary. Designing interior places relies on current conditions within the existing building and is contingent upon the surrounding context. Systematically designing interiors that focus only on aesthetic and individual phenomena feeds a restrictive notion of boundaries. Likewise, urban design, which dedicates itself primarily to political and geometric forces, supports the illusion of a disciplinary edge. Each discipline should make use of the broader frontiers of its neighbors. As Terry Meade has commented, interior designers often overlook critical discussions about the sociopolitical issues occurring in the built environment.[5] This circumstance has arisen because most interior spaces are private and not a part of the commons. Designers may feel that they are absolved from allegiance to meeting the collective demands of the public, but the discipline is neglecting a varied and stimulating discourse. This inattention to the concerns of urban society is a cavity in everyday design practice. As such, the theoretical inquiry into collective memory and the politics of inclusion and their role in the built interior are not as prevalent in contemporary interior architectural theory as in other design disciplines. To begin incorporating them into

interior architectural theory, we must appropriate perspectives from urban design and anthropology. Acknowledging the politics of the interior through the lens of other disciplines will enhance both interior architectural theory and practice.

Figure 8.1 Diagram depicting related design disciplines and territorial frontiers. Hatched zones represent interior architecture, architecture, and the urban design. Overlapping areas represent opportunities for appropriation between the disciplines (e.g., political-spatial meets individual-experiential). Dotted zones represent allied fields not addressed in this chapter.

Image credit: author

Cultural geography: place, space, and non-place

Emotions are individual feelings produced by internal provocations like memories or shared external stimuli, such as catharsis or euphoria at a public performance. Emotions drive our actions, our creative work, and the way we perceive designed places. Our state of mind has a distinct social character, caused by and occurring within social situations. There are societal norms for emotional and experiential responses to situations, places, and interactions. The emotional culture of a people embodies and communicates the principles of that society.[6] Emotional culture is a reflection of our group identity. Collectively, our memories and emotions read space through a lens that is unified by a culture – be it generational, geographical, or otherwise. The shared constitutional order of the urban fabric persists while the built environment is obliterated, reimagined, and revered. The collective memory remains.[7] Society forms the outer layer of the spatial public realm. There is an implicit agreement, a social contract, which recognizes the role of collectivity within that framework. Mundane daily activities (the structure of our lives) avert our eyes from seeing the impact of society on the city. By studying and valuing familiar moments in everyday life, we understand how humanity transforms the design of interiors.

In his philosophy of place and space, Michel de Certeau, a French Jesuit priest and scholar, describes space as an area that is stimulated by people. He describes place as an area of stasis, where everything is ordered, identifiable, and codified, and anthropological space as an experiential place within a contextual setting.[8] Marc Augé expands his theory of place as a derivative of de Certeau's anthropological spaces. Unlike de Certeau, he sees place and space as a dialectic and makes a distinction between the two. His interpretation of place deposits layers of events, histories, and cultures to reinforce the inertia of place. He describes space as abstract – occupied by people, a physical void, or a time interval. Interior architectural theory

should consider space in terms of a people-activated zone made by human interaction. Two people initially form a space, and then expand to a group, followed by relation to the built environment, the city, and ultimately, society. We transform a place into space by our interaction with each other, with buildings, and with the city. We identify our perception of space through these interactions, yet begin with the foundation of our collective memory. Design reveals the importance of everyday life and intimate moments within the built environment. Place forms our early memories.

By extension, Augé's non-place is characterized as a postmodern, generic space occupied by people for a predetermined reason (Figure 8.2). For example, people relate to shopping malls and airports in a detached, solitary manner.[9] Non-places take our collective identity and twist it into a heterotopic, transactional experience. The question remains, how do people activate the space of a non-place, and how subjective is their experience? In non-places, how much separation is there between Augé's objective conditions of space and the subjective experiences of place?[10] What is the phenomenology of the non-place?

We could speculate that non-places allow for experiences of psychological interiority. The contemporary physical experience of space is less subjective, thus allowing for greater introspection and the development of an internal narrative. Society's obsession with social networking and uninterrupted engagement with online media has reinforced this condition of postmodern interiority in the built environment. In light of this, what is the phenomenology of physical places when one's identity exists in a smartphone? Perhaps due to this open-sourced global connectivity, people are becoming even more consumed with how cultural and political identities define themselves, and therefore, have grown more political about the near environment.[11] Conversely, an online identity may not be an everyday identity, but a character projected to others.[12] Online, people represent their curated identity. Regardless, the spatial identity of society is changing due to the postmodern condition. Further definition of the politics of the interior is needed to enhance contemporary design scholarship.

Figure 8.2 IIT McCormick Center by OMA. From left: people-activated space at the computer center; corridor as non-place; ritual of dining, materiality, and reflections create place.

Image credit: author

In reading space and understanding non-place in the context of place, we must speculate on the everyday.[13] Many cultural theorists elevate the micro-subversions of the everyday as a diversion from the monotony of the mundane.[14] Consider the defiant pleasure you might experience in covertly stealing shampoo from a business hotel, or the sense of control that you feel in screening your phone calls. This way of understanding the everyday, or quotidian routine of life, brings about micro-subversive actions that drive away boredom. Likewise, the commodity consumption of everyday material culture emits a signal representing our chosen identity. In this model, using fashion, design, and online identities, we must project ourselves as unique so as to undermine the banality of everyday life.[15] Both of these approaches to consumerism imply that everyday life is dull, yet by researching the commonplace we elevate it. We lift it up in the same way that cultural theorists have elevated micro-subversions and material culture. Design is embedded in the everyday and has intrinsic value. Studying the aesthetics of the mundane and non-place enhances the development of interior architectural theory. It reveals that informal actions have value: everyday objects, underserved populations, and modestly detailed buildings.

By analyzing the everyday, we can see the authenticity and the capacity of "placeness" in the most ordinary of non-places.

Urban geography: political and experiential

To understand politics and the everyday, we should consider the work of the Situationists International. Members Guy Debord, Asger Jorn, and Constant Nieuwenhuys were influenced by Dada and Surrealism. They would *dérive* (drift) through the city by arranging experiential, unplanned (and often alcohol-fueled) multi-day journeys. These dérives were used to question the nature of urbanism, consumerism, and the individual. Through psychogeography, the Situationists were attempting to take urbanism and expose its individual, experiential qualities rather than aspects of political or geometric structure. Debord described psychogeography as an understanding of the "precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals."[16] It was conceived to expose the means by which conventional urban design controls everyday life and the ways in which this control can be exposed and subverted.[17] For the next few years, the Situationists created political art responding to these issues (Figure 8.3). Public housing developments were of particular concern, and they suggested that the top-down design approach stifled psychogeographic aspects of the city and individual creativity. It removed the artist from the environment of the city and prioritized the rationale of the city grid over the urban experience.[18]

Figure 8.3 "Beauty is in the Street"; Situationist poster in support of May 1968 uprising

Image credit: Bibliothèque nationale de France

The work of the Situationists is particularly compelling within the context of political interior architecture, because it provides a model for subversion of conventional urban design. While still being political and concerned with spaces of movement, it explores the everyday city from an experiential and personal standpoint. To enhance the political and spatial

motivations of interior architecture, we must heighten our awareness of the everyday interior environment. Intimacy, memories, and emotions help us acknowledge our humanity and understand place. Each person has value. Each experience or memory is significant because it contains the bits that make up a person. In light of this emphasis on the individual, how can interior architecture stimulate new forms of community, political agency, and social consciousness? In 1948, the United Nations adopted the Universal Declaration of Human Rights.[19] On the heels of World War II, the international community created the document to assure that the atrocities and suppression of that war were not repeated. The thirty articles proclaimed that all humans had unassailable rights or liberties that cannot be determined or oppressed by a governmental state. Articles 25(1) and 27(1) describe the right of each person to health, housing, community, and the arts:

> Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood in circumstances beyond his control.
>
> Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts, and to share in scientific advancement and its benefits.

By examining the Universal Declaration of Human Rights, we understand that everyone matters and each person should be able to access well-designed places and experiences. Interiors shape lives in the most fundamental and personal way. The built environment is a part of our collective memory, whether canonical or mundane. Memory and cultural identity are inextricably linked.[20] That concept gives everyday objects, like a recycling center or a gallon of milk, a design status that is not always

initially evident. Everything is designed and has value. As designers, we have the responsibility to promote access to design as a basic human right.

Through recognition of the occupiable threshold on the periphery of interior and urban territories, we uncover the frontier unifying these disciplines. We acknowledge the interior as both spatial and political, and that interior architecture concerns itself primarily with the human experience of the interior volume. Theoretical inquiry into collective memory, the politics of inclusion and its role in the built environment, can reposition the role of the interior in the volatile climate of contemporary design. There are several potential trajectories for future research into politicizing the interior: the conflict between material culture and sustainability, issues of parity in space-related civil rights acts, the impact of corporate design standards on experience and non-place, and the influence of pop culture and lowbrow design in interiors. These cultural and political issues have implications for interior architecture and beyond as the theoretical dialog surrounding the field develops. Recent symposia and lectures exploring the politics of the built environment may reveal a growing interest in this area.[21] All design disciplines, including interior architecture, should exploit the built environment's conventional frontiers to appropriate perspectives surrounding collective memory, the politics of inclusion, and the role of design in everyday places.

Notes

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19 “The Universal Declaration of Human Rights”, The United Nations, 10 December 1948, www.un.org/en/documents/udhr/index.

20 Aldo Rossi, *Architecture of the City* (Cambridge, MA: The MIT Press, 1984), pp. 130–131.

21 For recent symposia and lectures refer to: Architecture Exchange Symposium at the Architectural Association, "How Is Architecture Political?", Online Video: 4:04:12, 2014, www.aaschool.ac.uk/VIDEO/lecture.php?ID=2702; or Mitchell Lecture Series at School of the Art Institute of Chicago, "Urtzi Grau: Architecture, Interior Architecture, and Designed Objects", Online Video: 1:29:40, 2015, https://saic.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=f158c521-1969-4619-8f0e-1e8d860e3654; or Narratives and Design Studies Symposium: A Task of Translation at School of Art and Design History and Theory at Parsons, "Narratives of Agency", Online Video: 1:14:38, 2014, www.youtube.com/watch?v=F2AMXZnWia0.

Chapter 9

Fabricating interiority

Marc Manack

fab·ri·ca·tion

1. the action or process of manufacturing or inventing something.
2. an invention; a lie.[1]

In order to situate itself as a unique field with its own disciplinary parameters, interior architecture must create a distinction from architecture – a field with its own equally problematic and conflicted record of establishing disciplinary autonomy.[2] As theorist John McMorrough has noted,

> architecture's history and legacy – maybe its very meaning – is to be found in the creation of reasonable explanations for its existence, its *raisons d'etre* made in the midst of a series of preservative justifications, in leaps of faith and defensive postures.[3]

Perhaps rather than explanations, architecture's best claim to reinforcing its own discipline lies in the fundamental act of design in the creation of space, making distinctions from "amorphous" and non-architectural environments.[4]

For interior architecture, its disciplinary claim may be tied to the creation of finer distinctions within architecture – as a subspecies. Unique among the design disciplines, interior architecture is contingent upon another field for its existence. The interior is derived from architecture, and in every instance, architecture is a precondition for interior architecture, yet the same claim cannot be made in reverse. Interiors are far less deferential to architecture than architecture is dependent on the environment. Considering parallel histories between the two fields, architecture has progressively sought to diminish distinctions from the environment, while interiors have sought to intensify distinctions from architecture. Rather than a submissive or subservient stance suggested by its relationship to architecture – by articulating its disciplinary autonomy in association with technological advancements in design and construction – interior architecture has developed the techniques to produce some of the most powerful transformative effects available to designers engaged with space.

Although the common principle between architecture and interior architecture is that each field is animated by organizing relations between exterior and interior conditions, differences between the disciplines emerge once we consider the means, methods, and position under which the exchange between inside and outside are made distinct. Architecture begins with the exterior, on the outside. Architectural projects come into being through a dialogue between an external context with an internal use, from which an interior will be defined and constructed. This process moves from outside to inside given that the exterior environment is an existing condition; architecture must first create a distinction from it. As such, the methodologies of architectural production are primarily concerned with this mediation of external and internal influences to construct a threshold that articulates distinctions and relationships between natural and fabricated worlds. Consequently, a work of architecture often establishes its identity

primarily through its exterior presence, with the interior serving to authenticate the architecture's attitude toward, and relationship to, its exterior environment.

As its name suggests, interior architecture exists inside. While interior architecture may affect or influence the threshold between inside and out, its creative preoccupation lies in the production of an alternative environment within architecture, a designed world within a designed world. Interior architecture is contingent upon a constructed environment; its possibilities and limits are defined by a built and consequently artificial world. As a spatial practice, interior architecture emerges through the imagination of the space between interior and architecture, a space far more autonomous – and less constrained – than the relationship between architecture and site. Given that interior architecture is a construct within a construct, its relationship with architecture is at once less interdependent and more relaxed, expanding the field's potential for pure invention. It is under these terms that interior architecture defines its territory and intensifies its distinction from architecture. Ultimately, the interiority of interior architecture is a complete fabrication, an artifice embedded within an edifice.

If the narrative and ethics of fabrication are inextricably linked to the discipline of interior architecture, it is through the developments of modern design and building technology that the identity of the field has been constructed and where its principles become evident. In terms of building construction technology, the interior was historically more autonomous than its modern counterpart. Its perceptual and experiential distinctions are inherent in the technical capacities of construction methods. In premodern building, the distinctions between exterior and interior were often better defined by the composite effects of load-bearing exterior walls, creating envelopes of solid construction that, despite creating a direct relationship between enclosure and structure through a monolithic section, allowed for a wide array of articulations. The massiveness and opacity of the construction enabled expressive, unique, and often counterintuitive distinctions in the formal presences, spatial qualities, and surface effects

between inside and outside, establishing unique identities between architecture and interior through the use of poché and ornamentation to create character. By coupling the technological and qualitative characteristics, solid construction creates distinct exterior and interior through a single act of architectural design, within a single discipline. In modern building, as solid construction gives way to layered filigree assemblies and systems as new building typologies emerge, interior architecture finds its agency as a discipline. As an established profession, the design of interiors comes into being through the modern tall building. This building type, whose novel scale (at the time) and repetitive pro forma, worked together to seduce architects into a simultaneously unbalanced attention to the composition and appearance of exterior vertical surface and collective disinterest in the interior space beyond the ground floor lobby. Most of the interior volume of skyscrapers was given over to the interior designer.

The paradox for interior architecture is that the skyscraper both challenged and reinforced the discipline's nascent identity. As modern filigree construction of the steel frame and curtain wall construction progressively dissolved the building envelope through the transparent material, the possibility of distinction for the interior architecture was equally diminished.[5] The seeming loss of the interior identity by its perceptual seamlessness with exterior in the glazed curtain wall is dramatically counteracted, however, by the sectional dynamic of the skyscraper. The repetition of uniform, undifferentiated, horizontal floors connected by elevators at once prevents spatial experiences of vertical continuity between floors and promotes horizontal expansion of space. This effectively turns each floor into an isolated distinct world in relation to the flattened "wallpaper" of the surrounding urban panorama on its perimeter vertical surface. While the architecture of the building may have but one static design by a single author, the skyscraper initiated the evolution of multiple, episodic interior architectures by multiple authors. Regardless, it is a moment where the modern interior is completely indifferent to, and largely unaffected by, the architecture it is housed within, free to fabricate its

own identity and position of interiority. This freedom coincides with the emerging independence of the construction of the modern interior. Suspended ceilings, raised floors, demountable partitions, and flexible, reconfigurable office furniture systems (the kit of parts of the modern corporate interior) all operate with an impermanence and literal detachment from the architectural envelope within which they are housed. These elements become the means for the interior to assert its autonomy. The decoupling of the interior from architecture, in technological terms, not only provides the means for generating an independent interior architecture, but also emancipates the field to invent the disciplinary logic of interiority. Here, a complete and alternate world apart from the architecture, with unique authorial expression and embodied spatial effects, embodies a presence and identity that rivals architecture.

Effectively, the discipline of interior architecture seeks to recapture the distinctions between inside and outside inherent in premodern architecture, but with modern technologies, and from a point of view that privileges interiority, developing discrete spatial experiences with unique identities from the inside out. For interior architecture to achieve a distinct identity requires legibility and a trajectory toward singularity, one which takes its fundamental design techniques – namely the development of an interior spatial envelope, the subdivision or demising of interior space, the articulation or treatment of surfaces, and the placement of objects within a space – and begins to merge them into singular emphatic elements that define the spatial design as distinct from the architecture. The effect has been for the interior architect to consider spatial design as a unified atmosphere in a direct manner, with a limited vocabulary but a high degree of dynamic quality. Under this conception, floor, wall, ceiling, furniture, lighting, and beyond can be conceived not as distinct elements or layers, but rather as a singular expression.

As interior architecture has expanded venues for its expression, as well as technologies at the designer's disposal, its capacity to produce these singularities has increased, and its disciplinary position has intensified. This apotheosis may be evidenced in contemporary digital design and fabrication

technology. Digital fabrication processes translate information from a digital model or drawing to a computer-controlled fabrication machine, transforming immaterial design content into a material product. The technologies that seamlessly integrate design software and digital fabrication hardware (including computer controlled 3D printers, laser cutters, routers, mills, drones, and robots) have profoundly affected the design disciplines, reinvigorating not only an interest in making and material exploration, but also in the discourse and ethos of preindustrial eras.[6] The efficiency with which customizable, non-identical elements are designed and serially mass produced has made the deployment of bespoke elements viable in the construction industry by mitigating the premium cost for custom components and assemblies.[7] As a result of digital fabrication, the repertoire of visually complex forms or patterns available to designers has expanded, while the range of construction materials currently capable of working with digital tools in any given technology has remained fairly limited. It is this combination of increased modes of spatial articulation within a delimited palette that has reinforced contemporary interior architecture's ability to assert its unique identity.

Interior architecture can achieve – and perhaps even exceed – the autonomy of "inside-from-out" inherent in monolithic premodern construction methods because current digitally fabricated work deploys the cutting, carving, folding, and stacking of a singular material rather than assemblies of multiple materials. The Crystal Bridges Museum Store by Marlon Blackwell Architects provides such an example (Figure 9.1). Built within the Crystal Bridges Museum by Moshe Safdie, an architecture of distinct sculptural expression and material quality, the museum store creates autonomy for the interior architecture by dramatically refiguring the interior profile with an undulating spatial envelope composed of digitally fabricated wood sections.

Using the analogy of a lamella (the rib-like structure that forms the underside of a mushroom cap), the architects create the powerful perceptual effect of a continuous surface that wraps ceiling and walls through the sequence and spacing of the wood fins. Continuity is achieved

through the digital modeling process that slices a singular solid shape to create the splines and profiles, which ultimately become the cutting paths and templates used to extract the wood ribs from nominal panels. By sectioning the shape, two-dimensional materials are laminated in series to construct a three-dimensional volume of space, but in effect, the multiple sections recede in the service of articulating the legibility of the singular element and the experience of the singular space.[8]

Figure 9.1 Crystal Bridges Museum Store, Marlon Blackwell Architects, Construction Photo (Left, Courtesy of Marlon Blackwell Architects), Interior View Complete Project (Right, Timothy Hursley Photographer)

The spaces between the ribs are equally important in establishing the distinctions between architecture and interior. As one moves closer to align with the short edge of each rib section, one not only sees the thickness of the rib, but its separation from the adjacent architecture. The thickness of the construct is visible, an experience that was once only available through the abstraction of section drawing. The space of poché is now embodied in the material perception of the digitally fabricated rib. The detailing and curvature of the museum store only heightens the separation of the interior architecture. The wood ceiling and wall envelope never touch the surrounding construction, with continuous reveals at the perimeter creating the effect that this element hovers within the space. At moments creating affinities and alignments without deference to the architecture, the smooth

geometry of the interior appears as a delamination from it, yet borrows the logic of the architecture to establish independence and distinctions from it. In the museum store, the combination of digital design and fabrication reveal the processes and techniques of the interior architecture's philosophy and development in the final product. This creates an increased awareness between conceptualization and effect, at once strengthening its disciplinary position and experiential quality.

If the technique of sectioning available through digital fabrication has the possibility of rendering explicit the space between interior and architecture, then digital patterning and tiling uses surface effects and superficiality to implicitly animate distinctions between inside and out. Digitally fabricated patterns generated from computer-controlled cutting and carving tools have dramatically expanded the capacity of interior architects to generate unprecedented ornament and material surface articulation. The fact that these patterns can emerge out of information established in relational criteria from a project's architectural context is perhaps the digital technologies' most important contribution to the development of interior architecture's discipline.

SILO AR+D's North Presbyterian Church in Cleveland demonstrates how a relational pattern developed through the techniques of digital fabrication can transform the space between architecture and interior to create a radically alternative environment (Figure 9.2).

Set within an existing industrial building and a much larger renovation project, the limits of North Presbyterian Church's volume were highly constrained by the existing structure and infrastructure. Additionally, programmatic requirements of the church and other users in the building demanded the sanctuary space be scalable and multipurpose. The interior architecture worked to exploit the inherent contradictions in the project: to create a single sanctuary with the qualities that often characterize religious architecture (symmetry, axiality, volume, and indirect natural light) while allowing that same space to be subdivided into multiple rooms with asymmetrical entries (due to the constraints of a corner site).

Figure 9.2 North Presbyterian Church, SILO AR+D Complete Project (Left, Scott Pease Photographer), Exploded Perspective Drawings (Right, Courtesy of SILO AR+D)

By simultaneously working with concepts of volume and subdivision, the spatial design of North Presbyterian Church was conceived as a hybrid canopy/cathedral, a singular ceiling surface that continuously inflects to create a series of pyramidal vaults that delineate multiple scales of space, concealing the appearance of hardware and headers required for movable partitions. Using digital design tools, a sequence of design operations began by testing space plan and volume limits against the material dimensional constraints. The resultant form is derived as the interior applies pressure to the exterior, in effect, vacuum forming to its architectural limits. Clad in a durable bamboo resin material used in the construction of skateboard parks, the faceted ceiling panels are subdivided into an animated triangular pattern that accommodates lighting, HVAC, and sprinkler systems. This digitally fabricated pattern evolved by coupling a desire for visual complexity, nonstandard repetition, and material efficiency with the desire to create a spatial effect that would have local asymmetry and nuance within each face of the ceiling geometry. It does not sacrifice visual coherence, regardless of the spatial configuration and point of view. In addition to aesthetic considerations, to make the pattern feasible given the extremely tight budget constraints, material economy and fabrication time had to be maximized. Thus, a limited amount of standard triangular tile shapes are determined computationally by subdividing a standard,

rectilinear sheet of the ceiling cladding. These elements are repeated in various configurations to achieve the desired spatial effect.

This design process reveals a unique potential of digital fabrication for interior architecture: to develop a highly controlled, yet nondeterministic, spatial configuration and surface effect emerging out of resituating the autonomous interior in relation to an existing architecture. By exploiting the competing logics of complexity/economy and existing/new building technology for architecture and interiors made possible by digital fabrication, SILO AR+D's North Presbyterian Church creates an interior architecture using a singular dynamic element born out of those tensions. Its vicissitudes are registered on its surfaces, transforming the existing building into a distinct and immersive interior space.

As a product of pure invention, or fabrication, interior architecture's claims to disciplinary distinction may lie in the appearance of autonomy expressed in the arguments and effects of recent spatial designs. It is not enough, however, for an interior to simply look different from the architecture it is housed within. Instead, interior architecture must articulate its position in relation to architecture by revealing the means and methods in which those distinctions are manifested. The evolution of building technology throughout history has made possible the constructional separation between architecture and interior, which has evolved to the current moment through digital design and fabrication. The interstitial zone between disciplines can be subjected to finer and increasingly complex relationships which release the interior to establish its existence as absolute. Ultimately, digital fabrication has begun to actualize interior architecture's disciplinary imperative to, quite literally, fabricate distinctions from architecture through interiority. In doing so, it has activated the spatial designer's capacity for speculative imagination.

Notes

1 Fabrication definition excerpted from Google, www.google.com.

2 For more on architecture's search to define its disciplinary autonomy see Robert Somol, *Autonomy and Ideology: Positioning an Avant-Garde in America* (New York: Monacceli Press, 1997).

3 John McMorrough, "Ru(m)inations: The Haunts of Contemporary Architecture", *Perspecta* 40 (2008): 164.

4 Distinctions and the production of design worlds form the basis for William Mitchell's definition of "architecture" in William J. Mitchell, *The Logic of Architecture: Design, Computation, and Cognition* (Cambridge, MA: MIT Press, 1990).

5 An in-depth and elegant comparison between the historical, conceptual, and technical distinctions between solid and filigree construction methods is available in Andrea Deplazes, *Constructing Architecture Materials, Processes, Structures, a Handbook* (Basel: Birkhäuser, 2005).

6 Two books that offer substantive introductory surveys into the techniques, processes, and effects of digital fabrication: Lisa Iwamoto, *Digital Fabrications: Architectural and Material Techniques* (New York: Princeton Architectural Press, 2009) and Branko Kolarevic, *Manufacturing Material Effects: Rethinking Design and Making in Architecture* (New York: Routledge, 2008).

7 For more on the implications of authorship, mass customization, and the role of identicality in architecture's disciplinary foundations, see Mario Carpo, *The Alphabet and the Algorithm* (Cambridge, MA: MIT Press, 2011).

8 Sectioning is a term borrowed from Iwamoto, *Digital Fabrications*, pp. 8–17.

Chapter 10

Territory and inhabitation

Amy Campos

This chapter[1] proposes a development from the nineteenth-century territorial idea of a politically and geographically located landscape to a more nuanced understanding of *territory* as a defined, but placeless, field of action. Territory evolves from a fixed place to a nomadic system of occupation. Using historical examples that suggest varied definitions of territory, as well as contemporary interiors that engage modern conditions of placelessness, nomadism, and transience, this chapter describes a reciprocal, rather than hierarchical, relationship between territory and the inhabited interior.

The frontier

From the vantage point of the nineteenth-century American frontier, territory connotes the promise of ownership of land and resources and simultaneously suggests an affirmation of self. During the westward territorial expansion of the United States, settlers were allowed to stake claim to land under the notion of Manifest Destiny, a belief that American citizens had a fundamental right to own land and a duty to steward it.[2] This

claimed landscape was seen as a resource-rich, culturally blank slate upon which owners could pursue new ideals, beyond the persecution of feudal hierarchies and "Old World" values. In the Jeffersonian sense, the enculturation of place was dictated by the will and self-realization of the free individual who staked claim to that territory. Ownership of a landscape territory provided the social freedom for an owner to construct one's own inhabitation of that place. Territory, as a located place, became the hierarchically dominant component of a complex spatial and cultural system. In this case, the land itself provides the structure for inhabitation and the cultural context that might emerge from it.[3]

Constructed territories

Neolithic Southern Anatolia represents an inversion of the frontier's territorial hierarchy. The construction of habitations produced a fabricated territory upon which a public culture was defined. Çatalhöyük was one of the earliest and most unique urban settlements.[4] It was occupied between 7400 and 6200 BC on the Southern Anatolian Plateau in present-day Turkey. In this densely populated settlement, individual houses were built directly adjacent to each other. The houses were built from mud bricks reinforced with wooden posts, made up of a large single room with smaller storage rooms built around the periphery. Interior walls were plastered and decorated frequently; platforms for various uses were built within the main interior. The only means of egress was provided through the roof via a wooden ladder and openings to the exterior. In Çatalhöyük, there were no streets or squares separating independent buildings, only an aggregate of dwellings entered through rooftop hatches. The city was built as a single, agglomerated structure. In fact, the roof of this megastructure was the thoroughfare, the public square, and the entry point for interior dwellings. Over many generations, houses were rebuilt on previous layers of demolition. Sometimes, as many as eighteen layers built the city mound's topography, making the roof structure stepped to provide shady places to gather outside and a vertical surface for small windows providing light to

the interiors. The roofline acts as the territorial marker between interior and exterior – private and public – space. The spatial hierarchy of the American frontier is reversed in Çatalhöyük's monolithic city. Here, the constructed interior produces a public space that defines the territory of the city.

Where the frontier and the aggregate cityscape suggest various intersecting relationships between territory and interior, the Lockheed Burbank Aircraft Plant exemplifies a complete disconnection of the interior activities from the exterior environment in which it resides. After the attack on Pearl Harbor by the Japanese at the end of 1941, the United States enlisted Colonel John F. Ohmer to deploy camouflage and decoy techniques to help protect key military sites in California. Ohmer had witnessed the success of military decoys at the Battle of Britain in 1940: by placing full-scale decoys of military equipment on the ground in the countryside, including tanks, aircrafts, and buildings, the British misdirected surveillance from enemy planes flying above and forced the enemy to expunge massive amounts of bombs on these decoy targets.[5] In Burbank, rather than strategically directing enemy attention to another unpopulated location using decoys, the United States wanted to camouflage *existing* military locations. In order to deceive the Japanese in much more urbanized areas in California, Ohmer would have to deploy this decoy strategy at the scale of an entire landscape. At the Lockheed Burbank Aircraft Plant in the suburbs of Los Angeles, teams of set and prop designers, decorators, stage managers, and other experts from Hollywood's production stages were recruited to take on the massive project of hiding a military operation the size of an entire neighborhood. An enormous scrim roof was constructed to cover the entire plant, including all of its buildings, streets and parking infrastructure, aircraft hangars, and runways. The scrim was erected to look like the American suburbs that surrounded the plant. Paper thin fake houses, streets with rubber cars, trees, and shrubs, even laundry lines complete with drying clothes and fire hydrants made up the elevated horizontal decoy. This exterior space, seen only from above, produced a new horizontal facade built as a peripheral diversion for a series of precise and enclosed actions. The decoration of the exterior, as a decoy landscape, acts an architectural

distraction from the covert operations of the plant inside, becoming the antithesis to the adage "form follows function."[6] The interior of the Lockheed Burbank Aircraft Plant is created and enclosed by an artificial suburban landscape that blends into the actual surrounding suburban landscape, neither of which is integral to the internal operations of the plant itself. Interiority exists independent of territory as a located condition. The plant is a hidden, placeless island within an intentionally inconsequential landscape. The landscape of this false suburb, the camouflage scrim, allows the interior to be liberated from place, suggesting a potential for it to exist in any location or no location.

The liberated interior

An excellent historical example of an interior condition that migrates from place to place is provided by the use of tapestries. Tapestries were prized possessions, taking much skill, time, and capital to produce. The large-scale manufacture of tapestries increased significantly at the end of the Middle Ages, simultaneous with the advancement from wooden fortresses to defensive stone strongholds in northern Europe's colder climates. As territories became defined by more permanent architectural outposts, the tapestries developed as equally valuable tools for indicating dominion and power as rulers traveled from one location to another. The tapestries served two primary functions: to ease the chill of the interior of these massive stone constructions by acting as an applied insulation, and to depict the power and wealth of those who owned them through the scale, complexity, and narrative depictions of each tapestry. The Redemption of Man Series from the early sixteenth century, for example, is made up of ten 26-foot-wide panels.[7] Only a hall or space at least 260 feet long could accommodate the series, and as tapestries are meant to travel, the implication here is that the owner of such a masterpiece could only have such vast wealth and property as to accommodate such a large series in multiple locations. Tapestries were easily transported and quickly installed, moving with the owner from fortress to fortress and even onto the battlefield. Wherever their owners took

them, tapestries marked territory. By the seventeenth and eighteenth centuries, tapestries often depicted realistic scenes of distant or fantastical places. The tapestries became a virtual window to another highly embellished narrative territory regardless of the actual environment within which it resided. They typically passed between multiple generations, reinforcing family mythologies through their narrative depictions. It was the mobility of the tapestries that rendered them strategically more valuable, precisely as a result of their itinerant quality.

Today, such value is amplified in the context of increasingly nomadic economies and populations. Recent and ongoing global crises in resource scarcity, skilled labor, climate change, and shifting industries have resulted in mass migrations of markets, resources, and people. In the United States, people relocate frequently at an average of every five to seven years over the course of their lifetimes. The ability for the liberated interior to move redefines territorial occupation as a materially and culturally transient condition.

The design for Titlecase, a typography studio in San Francisco, is approached as a spatial puzzle that can be reconfigured indefinitely. Titlecase is a joint venture between two independent typographers who had moved from New York at different times, met in San Francisco, and are partners in the space and various events within it while maintaining independent practices. Both partners plan to eventually expand into separate spaces. Faced with this situation, the choice is often relatively disposable, temporary interior products meant to be consumed for a single space and discarded when locations change. With increasing resource scarcity and population mobility, however, this is a progressively untenable approach to the way we live today. At Titlecase, this temporary condition was addressed through the development of permanent modular components (shelving, desks, benches, and cabinets) proportionately designed in dimension and detail for easy reconfiguration within their current location and transferrable to any new space (Figure 10.1). The scale of change exists in daily or weekly cycles within a single location. Here, work space for the two partners and their temporary staff becomes instructional space for hosting

workshops, instructional space becomes lounge space, and everything can be moved to the perimeter to act as backdrop for social gatherings, lectures, and parties. Designed for a permanent state of flux in program, this project produces a permanently nomadic plan for a single space that can be transferred and expanded into a new space; spatial informality and flexibility are necessities. The clients participate in the making of the space every day and use the framework of the design as a platform for their own experimentations in occupation.

Placemaking for tools of their vocation became highly specified: organization and creative space on the desks articulated through the specific location of pen holders, accommodations for right- or left-handedness, preference for notebook or trace roll racks, and foot rests are all part of the desk designs. Territory is staked out at the scale of furniture rather than at the scale of landscape. Semi-permanent installations provide a consistent identity to varying events and configurations at Titlecase: an homage to Fred Sandback in the form of a string installation ten feet above the floor, a painted datum that coincides with the height of the desks and cabinets, and a custom-made, vacuum-formed, translucent, backlit ceiling feature made using the client's vocational tools. The lack of commitment to the space itself, but acknowledgement of the need for specificity in environmental identity and function, afforded a free experimentation as a series of ongoing physical and programmatic installations. This interior provides new ground for the exploration of mobility and impermanence in the context of *any* spatial environment.

Figure 10.1 ACA – Amy Campos Architect, *Titlecase custom furniture details* (2012)

Image credit: Amy Campos

Similarly, the Migrant Interior residential project in San Jose, California, straddled spheres of interior design, curation, installation, and organizational planning. This client knew they would move multiple times over the life of the design, so most of their financial and emotional dedication to the project went toward what we normally think of as the least permanent, most migrant components. Similar to Titlecase, the clients knew that the place they inhabited would likely change before the things they put in that space would. They were building a family and a home together and wanted to start that process before settling in one location or space, as is increasingly the case for contemporary populations. The project was approached as a set of usable environmental guides to be deployed within this space and built upon within any other space they might inhabit in the future. The interior as a set of inhabitable elements, from their point of view, defined a much more permanent sense of place than the architecture or location – very much like the example of the tapestry. What was

ultimately provided for this client was a plan of action, a designed timeline for use and change from location to location.

Aesthetic decisions for the furnishings and materials had to be coordinated throughout the project so that items rearranged in a new space could match. Specific consistent color and material strategies that could shuffle as their family grew provided a long-term foundation for the quality of their home in any location and in any configuration. A movable, custom installation of a floating field of glass spheres was commissioned as a long-lasting investment in their notion of home because of its mobility. Consisting of almost 100 hand-blown glass spheres suspended from seven different colors of monofilament that would catch the natural and artificial light existing in the space, the sculpture is designed to adjust volumetrically to new spaces as the family moves (Figure 10.2). The design also had to specifically address the process of installation in multiple locations so that the final piece could be installed and hang with no two glass balls touching each other once in place. In this case, the piece floats over the dining room, lowering the perceived verticality of the space and casting bubble-like shadows on the walls. The opportunity to embrace transience as a design strategy is inherent to the impermanent character of the interior, being more fixed to this family's evolving scale, location, and eventual dispersion than the architecture or place. Fixed location is seen here as a changing scaffold for a durable but nomadic interior condition.

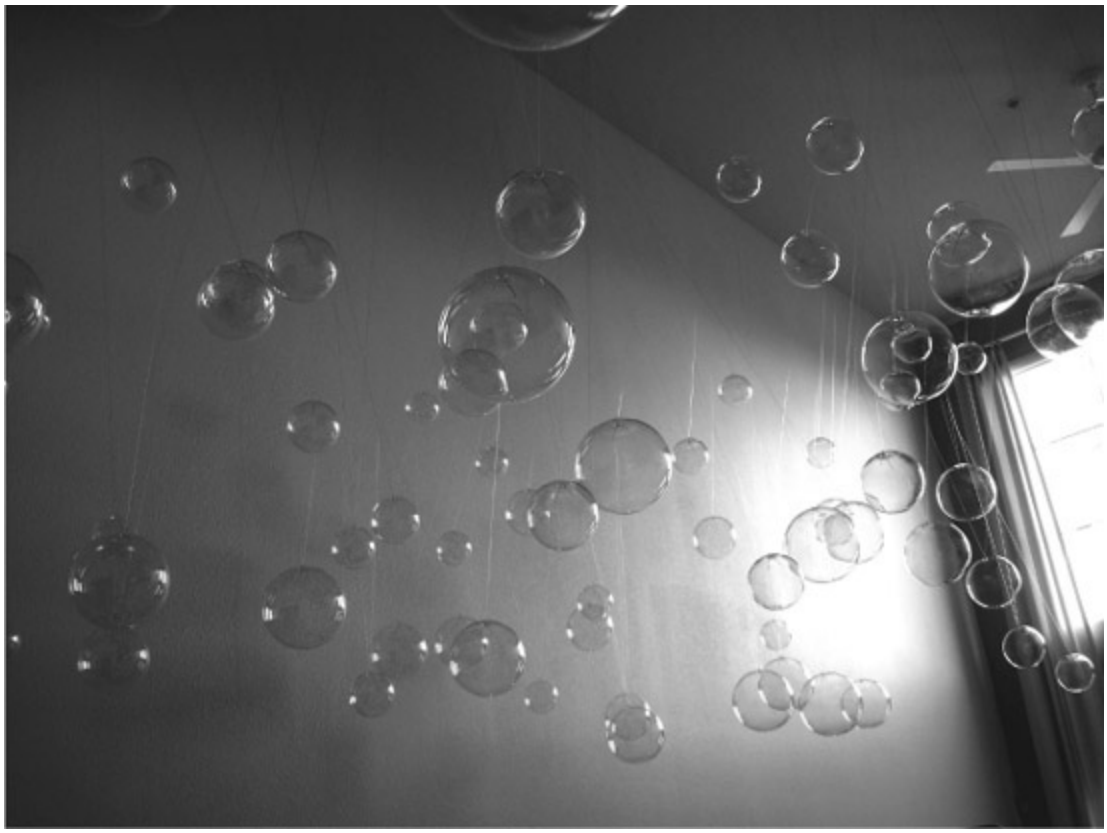

Figure 10.2 ACA Amy Campos Architect, *Migrant Interior installation detail* (2011)

Image credit: Amy Campos

Territorial transience

In the twenty-first century, occupying a situated place becomes less significant than the ability to sustain multiple and simultaneous conditions in one space or location. The design of the interior and its objects can be defined as processes of occupation rather than as artifacts of a specific location. The design of the Tailored hair salon and art gallery, in downtown San Francisco, seeks to balance flexibility and transformability with economy, accommodating multiple spatial configurations using a set of modular furniture components in a single temporary location. The 1,200-square-foot space simultaneously houses the everyday workings of a salon, including a retail display, with the ability to transform into an art gallery and venue for special occasions. Because of the transient nature of the

project, a singular design solution could not provide for the many simultaneous activities required in the space.

A modular system of components was designed for the project that could move, aggregate, stack, and disperse to produce multiple, varied, and at times simultaneous inhabitations of the space (Figure 10.3). The "toggle stool" is a multidirectional furniture piece designed to stack and cluster as lounge and party seating, tables, counters, or shelving that can hang from the wall or rest on a grid of pegs. Styling stands contain concealed lighting at the top of the mirrors to illuminate clients; they can be rolled into place for various styling configurations or pushed into gallery wall combinations for art openings. At the top of each mirror is a groove that can receive a picture rail hook so that art could be hung in front of the mirror and lit by internal led lighting. The styling stands can be plugged into any location within a grid of power outlets in the ceiling above. The stands house all styling equipment, including holsters for hairdryers and flat irons that float above a power trough in the base of the stands, omitting the usual trail of cords from the floor. The design of the interior becomes an integral part of the company's growing mobile aesthetic. The salon's modularity can accommodate the expansion of their business in the current space and in new spaces as they grow and build their brand. The flexibility of the modular system acknowledges diurnal processes of use to orchestrate multiple uses at the same time. At Tailored, the employment of modular objects enables the structuring of movements, cycles, and simultaneous occupations in space, regardless of location.

Liberated interiors, like the Lockheed Burbank Aircraft Plant and the Migrant Interior project, suggest an inversion of the nineteenth-century territorial idea, allowing the interior to be defined as an inhabited – if placeless – territory. Transient interiors, exemplified by the tapestry, Titlecase, and Tailored Salon, introduces mobility and simultaneity as an evolution of territory in a twenty-first century, resource-scarce, nomadic context. Inhabitation locates territory within a placeless, modern social context. Territory as occupied space, and interior as defined inhabitation,

have evolved into a singular field of designed action, equally and reciprocally defining each other.

Figure 10.3 ACA Amy Campos Architect, *Tailored Salon* (2013)

Image credit: Amy Campos

Notes

1 Portions of this chapter were previously published in the *International Journal of Interior Architecture + Spatial Design* 1, "Autonomous Identities" issue (2013).

2 John O'Sullivan, "Annexation", *The United States Democratic Review* (July–August 1845): 5.

3 Thomas Jefferson, "Louisiana Purchase Treaty", *Paris*, 30 April 1803.

4 UNESCO World Heritage Centre, "Neolithic Site of Çatalhöyük", 2015, http://whc.unesco.org/en/list/1405 (accessed 1 July 2015).

5 Lockheed Martin, "Lockheed During World War II: Operation Camouflage", 2015, www.lockheedmartin.com/us/100years/stories/camouflage.html (accessed 3 July 2015).

6 Louis H. Sullivan, "The Tall Office Building Artistically Considered", *Lippincott's Magazine*, March 1896: 403–409.

7 Anna G. Bennett, *Five Centuries of Tapestries* (Rutland, Vermont and Tokyo, Japan: The Fine Arts Museums of San Francisco and Charles E. Tuttle Co., Inc., 1976).

Chapter 11

Swimming upstream

Repositioning authorship and expanding the agency of the architect

Blair Satterfield and Marc Swackhamer

Designers can no longer afford to operate outside the flow of production. This chapter highlights examples of interior architectural practice models and projects built with custom tools that challenge conventional fabrication methods. Through increased participation in the construction process, materials research, tool design, and atypical collaborative teams, the designers discussed herein have increased formal variation to produce work that is more sensitive to program and performance, while decreasing cost. An example project, *Swimming Upstream*, speculates on how designers can recapture control of construction processes that have left them increasingly marginalized as participants in the conception of interiors, buildings, cities, and infrastructures. It offers tactics like the production of custom adaptable tools and processes (applied to a variety of material practices) to transform and aggregate excessively standardized building materials at varying scales from architectural interiors to infrastructure. It considers moving the point

of production from the factory (consolidated and centralized) to the jobsite (distributed and situated), and returning control of production to the architect.

The expanding space of work

The petroleum, software, biotech, metals, and pharmaceutical industries are not typically offered as model examples for best practices in design. The mention of them here is in no way an endorsement of their products, politics, or global practices. Instead, they are presented as business models that share one important trait: each of these industries defines the space of work as a complete and inclusive continuum that has location and directional flow. In each of the examples offered, the space of work is referred to as a stream with distinct locations defined as upstream, midstream, and downstream. Each location refers to a specific phase or type of work. *Upstream* identifies the search for and extraction of a resource. *Midstream* refers to the storage and distribution of raw materials. *Downstream* is where a given resource is refined and converted into a product. Designers, and to some extent architects, are increasingly expanding their work streams. As new technologies and tools become available, it is productive to consider other industries for examples of how the field of design is evolving.

Increased access to information and digital tools is expanding the reach of the designer, allowing entry into areas of production and fabrication long lost to other industries and professionals. These tools are also opening up market segments and fundamentally shifting how designers conceive of materials, construction, and architectural form. Software has grown into more than merely a tool of representation. It is increasingly paired with digital fabrication tools, a marriage of input and output that become generators of real physical form. The compact sizes and increasing ubiquity of these tools relentlessly erodes the defining hold industry has had on construction, and therefore design strategies, up to and through the twentieth century. These shifts have opened new areas of discourse in design

and changed how we define authorship. The following models are offered as examples.

Shared collaborative authorship

Consultancy in design practice is a trusted approach where specialists from a variety of focused disciplines work in support of a lead designer's established vision for a project. Jenny Sabin Studio uses this strategy to generate its designs. By designing collaboratively with individuals ranging from materials scientists, electrical and systems engineers, and cellular biologists to members of parallel disciplines (industrial designers at Nike, for example), Sabin is able to conceive and prototype innovative projects that operate at multiple scales and use material properties and biological processes as points of departure. One example, "eSkin," studies cellular behavior and utilizes it as a model for generating responsive architectural surfaces. These novel systems actively answer to environmental input at a microscopic level. The result is a project that behaves more like a living organism than a building. By developing the design through bioengineering research and collaboratively authoring that research with consultants earlier in the process (upstream from where an architect typically operates), Sabin fundamentally challenges the status quo of conventional design practice. In another project, Branching Morphologies, she collaborates with a discipline even further removed from design: the University of Pennsylvania's Department of Pathology and Laboratory Medicine. Through a simple set of rules gleaned from her collaborator's research into lung endothelial cell growth, a complex datascape of woven textile surfaces emerges. In the project, Sabin serves less as a conventional designer and more as an investigative researcher, by identifying rules and patterns from another field of study from which she borrows to generate architectural form. Branching Morphologies serves as a didactic to clarify for the layperson an otherwise impenetrable biological process, while simultaneously offering a novel and unpredictable spatial experience.

Authoring new tools

Innovation within an existing set of means and methods has limits. In order to truly push a boundary, the tools used to generate ideas, forms, and assemblies need to evolve as well. Gehry Technologies was borne out of Frank O. Gehry Architects' interest in developing new and more powerful ways of delivering complex architectural projects.[1] Founded over twenty years ago, Gehry Technologies was an early adopter of Building Information Management (BIM) software. The firm borrowed parametric software and digital fabrication tools from other industries and applied them to building design and delivery. This ultimately led to direct collaborations with aerospace and automotive designers and engineers to develop new tools and techniques for their practice. Today, Gehry Technologies (acquired by Trimble in 2014) is a powerful consultancy with services that range from modeling and detailing architectural assemblies to generating 4D models of construction and product delivery. The lesson gleaned here is that, increasingly, when architects and designers grow dissatisfied with the tools available to them for project design, construction, and delivery, instead of compromising their work to fit into an antiquated system, they are swimming upstream to design the tools that help them design their work. This requires new knowledge and an ability to collaborate with and borrow ideas from others. In the case of Gehry Technologies, dissatisfaction with in-place modeling software led the company to look outside the conventional boundaries of the field of architecture. In other cases, designers have instead relied on their own unique expertise to influence areas of project delivery typically not under their control.

Authorship through labor and behavior

SHoP Architects designed the Virgin Atlantic Upper Class Clubhouse to accommodate first class travelers in JFK International Airport's Terminal 4. The project is conceived as a combinatory critique of security (visual surveillance) and privilege (conspicuous consumption). The resulting interior

project is a complex undulating screen wall comprised of thousands of digitally designed and fabricated components.[2] The construction of the project would have been prohibitive if skilled labor was required. The solution was to control assembly at the point of production. The logics of digital fabrication allowed the designers to create idiosyncratic pieces that were numbered and keyed for easy site assembly. Through this project and others like it, SHoP has grown to become specifically known for taking unprecedented control of construction and fabrication processes to carefully manage project output and costs. Where, in the case of Gehry Technologies, designers look outward to develop new tools for internal design processes (swimming upstream), in the case of SHoP, designers look inward to develop new tools for external partners (swimming downstream) in order to help them realize projects more efficiently and cost-effectively.[3] In both cases, they are operating outside conventional territories of their discipline to create new spaces.

In the Silk Pavilion, Neri Oxman and MIT Media Lab's Mediated Matter Group do more than manage construction; they give design authority over to those doing the building.[4] Instead of using digital fabrication tools to control the assembly of their design, the design team for the Silk Pavilion use scientific observation to predict the behavior of their construction team – live silkworms. Oxman and company deploy the live silkworms over a prefabricated, stretched net to weave the skin of an indoor domed room. By creating an armature that is first, a habitat for some 6,500 silkworms, and second, a space for human habitation, the team leverages the behavior of a natural system to ensure that the final design is unpredictable and serendipitous. While the designers can predict and direct a formal outcome, the precise nature of the pavilion's appearance is left in the hands (or spinnerets) of the silkworms. The pre-constructed armature anticipates behavioral tendencies, but cannot, with any degree of certainty, predict final appearance. Like Gehry Technologies and SHoP, the Mediated Matter Group resituates authorship in order to redefine what it means to "design" something. In this case the designers are "swimming midstream" to conflate design and construction into a single process.

This leads us to VarVac Wall, which we offer as an extended case study of our own work, to further speculate on the myriad ways designers are redefining design agency. In VarVac Wall (HouMinn Practice), we resituate control, and consequently the hand of the designer, by developing first, a system, and second, a tool, which together generate the project's formal characteristics. We do not willfully design the project. Instead, its final appearance is contingent upon programmatic circumstance and material parameters. As the designers (or perhaps more accurately, the strategists), we set the stage for the project to unfold as a consequence of dynamic variables. The resulting project is more precisely responsive to its surroundings and markedly less expensive than it would have been using traditional construction techniques.

To understand how the project's system and tool set resituate authorship, it is first important to describe both in some detail. To generate the system, we surveyed the acoustic characteristics of an existing space: the front lobby/reception area of the University of Minnesota School of Architecture (Figure 11.1). This space has very particular sound requirements that change locally within the space from position to position. For example, in one location where a visitor might stand to converse with a receptionist, the room needs to be acoustically deadened with as little sound echo as possible. In another area, where that same visitor might sit to wait for an appointment, the room needs to be acoustically diffusive, but not necessarily absorptive as verbal communication is less important. To accommodate these differing sound requirements, we mapped a large wall in the space according to which areas adjacent to it needed to be absorptive and which areas needed to be reflective/diffusive. This mapping exercise defined zones on the wall with gradient conditions along their boundaries.

Once this system was in place, we developed an adaptable modular panel that could transform incrementally to accommodate the space's varying acoustic requirements. We identified a material in which we could easily modify shape and could also, dependent on its porosity, modify its ability to absorb or reflect sound. Because of our experience with it, and our mounting dissatisfaction with its limitations, we chose to use vacuum-

formed polystyrene. We say dissatisfaction because traditional vacuum forming comes with significant limitations. It is an excellent material if the goal is to produce multiple copies of an identical shape. This is because the initial mold presents a relatively high upfront cost, but the cost per unit decreases as more copies are produced. However, if units with any variation are desired, it is a very expensive material and process. Any modification to unit shape, even if minor, requires the fabrication of an entirely new mold. We grew interested in challenging this inherent material limitation.

Figure 11.1 Image of installed VarVac Wall, University of Minnesota School of Architecture main office

Image credit: Ryan Lodermeier

To do so, we developed a variable vacuum-forming mold (Figure 11.2). This mold turns traditional vacuum forming on end through the incorporation of dynamically modifiable components in the mold itself. The mold is relatively simple and inexpensive, especially when compared to

traditional molds. It is comprised of a large rectangular frame the size of the finished panel, and a series of cables stretched across it. The quantity, position, and density of those cables are variable. To produce a panel, a sheet of polystyrene is heated in a traditional vacuum-forming machine until it is droopy and pliable. Then, it is placed over the mold, where suction from the machine's vacuum pulls the pliable plastic through the openings between the cables. This produces a final panel made of a series of topographic hills. There are large hills where the cables were spaced further apart and small hills where they were spaced close together. From here, we set up a system of rules to perforate the panels. Any "hill" in a panel, as described above, extending higher than six inches, was trimmed off, turning it from a "hill" shape to a "butte" shape (or perhaps more precisely, a "volcano" shape, as this produced not a flat, closed top, but a hole). Larger hills resulted in larger holes. Described in another way, the further apart the cables on a given mold, the more porous the panel; the closer together the cables, the less porous the panel (Figure 11.3).

This detailed project description is necessary to fully explain how VarVac Wall resituates authorship. The correlation between cable spacing on the adaptable mold and degree of acoustic absorption/reflection could now be combined with the mapping of the wall's desired acoustic properties. Where the wall was mapped to be more absorptive, an algorithmic script randomly generated a less dense pattern of cables. Conversely, where the wall was mapped to be more reflective, the script generated a denser pattern of cables. In short, a mapping system was combined with a material logic to produce the shape of the wall. We did not actually design the wall itself. We designed a system for managing information and a new approach to material fabrication. The powerful combination of those two influences was more responsible for the design of the wall than we were as the project's actual designers. In VarVac Wall, similar to examples from Gehry Technologies, SHoP, and the Mediated Matter Group, design authority is resituated. By working upstream, midstream, or downstream from the design of the project itself, the designer is able to more fundamentally, precisely, and responsibly influence the character of the projects themselves.

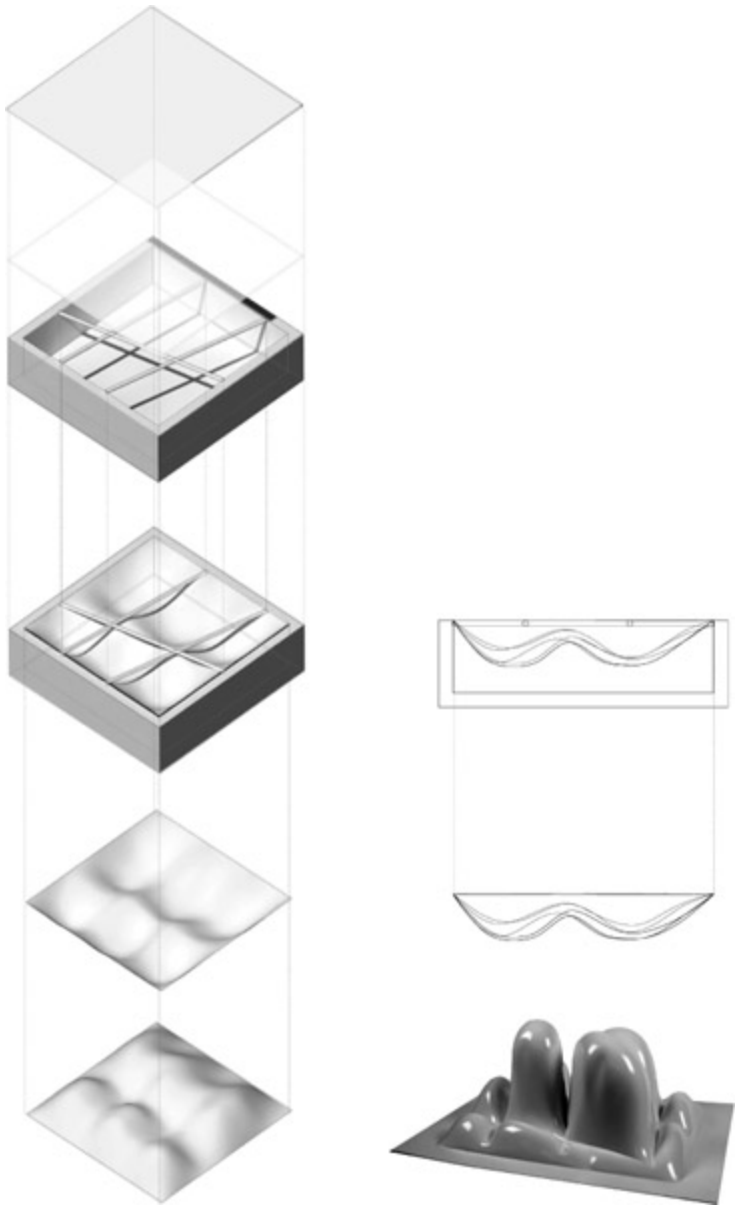

Figure 11.2 Diagram explaining the logic of VarVac mold. In VarVac, the thermoforming of plastic is a straightforward process. A sheet of material (plastic) is suspended over a form (a simple frame with insulated wires stretch across it). The plastic is heated until malleable, and then lowered over the form. The location of the wires is derived from a Grasshopper script that translates desired acoustical performance into a pattern of lines. The wires are organized to match these lines. The heated plastic is lowered and allowed to sag, finding its own form between the wires.

Image credit: authors

Figure 11.3 Detail of installed VarVac Wall. This image shows vacuum formed panels assembled over a green felt backing. Deeper draws result in larger openings. This reveals more sound absorbing felt.

Image credit: Ryan Lodermeier

VarVac Wall and the other examples outlined earlier serve as case studies in how spatial designers might begin to resituate design authority, not to impact their work less, but, ironically, to impact it more. By relinquishing control in an area of a project where they traditionally seek to maximize control, the designer can paradoxically seize greater control. This is a risky proposition. It tasks designers with stepping outside of their typical disciplinary constraints to learn new skills and to collaboratively embrace the expertise of those from other disciplines. If we thought of our practices like the internet sales giant Amazon thinks of its business, what opportunities might arise? What are the corollaries in interior architectural practice to Amazon's expansion into the film, television, music, or home delivery industries? By asking these fundamental questions, we offer that

designers might want to swim upstream in order to more meaningfully influence the path of the water downstream.

Notes

1 Elite Kedan, Jon Dreyfous, and Craig Mutter, eds. *Provisional-Emerging Models of Architectural Practice USA* (New York: Princeton Architectural Press, 2010), pp. 182–189.

2 Kimberly Holden, Gregg Pasquarelli, Christopher Sharples, Coren Sharples, and William Sharples. *SHoP: Out of Practice* (New York: Monacelli Press, 2012), pp. 74–89.

3 Kedan et al., *Provisional-Emerging Models of Architectural Practice USA*, pp. 136–144.

4 Blaine Brownell and Marc Swackhamer, *Hypernatural: Architecture's New Relationship With Nature* (New York: Princeton Architectural Press, 2015), pp. 128–131.

Part three

Spatialities

Chapter 12

Inside looking in

The prospect of the aspect

Ursula Emery McClure and Michael A. McClure

The most impactful, important, and relevant artifacts of human occupation have one striking similarity: they resist the modernist impulse to be singularly understood. Instead, they are integrated, complex systems that resist separation. Only the design disciplines separate an interior from an exterior, from a landscape, from an urbanism, while in reality these elements are experienced as connected conditions. The Pantheon in Rome, for example, is a complex, connected set of experiences that draws 1.5 million visitors every year. It is equally celebrated by the trained designer and the tourist. The Pantheon contains one of the most recognizable interior spaces ever created by humankind. Visitors are drawn inside as all attention is pulled toward the omnipresent axis mundi. It is a center. It is a cave; heavy, cool, and dimly lit. The oculus always draws the viewer's attention to the sky and to the exterior. Consequently, the Pantheon is both a connector and a separator from the interior, from the landscape, and from the urban condition. To be under its portico temple front is to be simultaneously in the

Pantheon and in the landscape of the city. This multiple connectivity continues upon entry into the adjacent piazza and the city beyond.

The modernist distinctions between exterior and interior, and between object and space, do not hold at the Pantheon. The prospect is an aspect of its context. This chapter discusses the value of spaces that possess the prospect of the aspect – multiple interiorities across scales. Spaces that are simultaneously interior and exterior are not exclusive. They are inclusive, consistently defined, and reevaluated by their context. They persist through cultural shifts and thus contribute to their environs continuously across shifting social, cultural, and stylistic norms.

Prospect and aspect

The prospect of the aspect describes an experiential multiplicity of an object or space. The words prospect and aspect are derivatives from the Latin verb *specere*, "to look." The word prospect from *pro-* "forward" and *specere* "to look," and the word aspect from *ad-* "to, at" and *specere* "to look."[1] The prospect of the aspect is the looking forward from how one perceives and the continuation of that experiential multiplicity. It is a relationship between the exterior and the interior, but one that is not necessarily defined as under roof to not under roof. It is defined by the clarity of both being within a limited boundary (interior) and simultaneously looking beyond and experiencing that boundary (exterior). It is also infinitely repetitive. The prospect of the aspect is a recursive quality that gains its value in continuum and overlap, similar to standing between two mirrors that reflect continuously, also known as the Droste effect.[2] It is never a singular experience, as its physical construction denies spatial exclusivity.

Modernist hermetic seal and the isolation of disciplines

It is in the denial of spatial exclusivity that the prospect of the aspect counters the modernist hermetic seal and isolation of the design disciplines. The invention of air conditioning in the early twentieth century led to many monumental changes in the constructed environment, none more or less important than an absolute boundary between *inside* and *outside*. The ability to seal off the interior from the exterior meant that the interior no longer needed to negotiate – or even acknowledge – the exterior. The surrounding context, environment, and human occupations could be ignored. The building envelope became the boundary, and the object and its relative space could become entirely self-referential. This isolation increased when coupled with the requirements for occupancy classifications, fire separations, and protected egress. Rooms could be just about rooms, buildings just about buildings, and landscapes just about landscapes. The modernist doctrine "less is more," according to Venturi in his seminal book *Complexity and Contradiction*, "bemoaned complexity and justified exclusion for expressive purposes. It … permitted [one] to be highly selective in determining which problems to solve."[3] This exclusivity aligned with the professional distinction and education of the disciplines (architect, engineer, landscape architect, interior designer, etc.). The legal boundaries, the perceived boundaries, and the selected boundaries led to very static and singular objects and spaces, denying an architecture of complexity and contradiction that has a special obligation toward the whole. Its truth must be in its totality or its implications of totality. It must embody the difficult unity of inclusion, rather than the easy unity of exclusion. More is not less.[4]

Occupying the Oculi

The prospect of the aspect only exists as part of the whole. It is both internally referential (look at) and externally referential (look forward). This characteristic establishes the truth of the condition, and it is also what helps a human-occupied object or space maintain its continuum and relevance. The object or space that possesses the prospect of the aspect continuously contributes and participates with its environs across shifting social, cultural,

and stylistic norms. Traditional projects from cultures around the world demonstrate a strong relationship between the prospect and the aspect. A heightened awareness of the prospect of the aspect is the main purpose of a menhir, a pyramid, a stupa, a stela, an obelisk, or a mound. They are objects that are to be looked at while simultaneously directing focus to another axis. It could be argued that for these archetypal projects, the prospect of the aspect is an essential program. The following three examples present variations of the prospect of the aspect and attempt to illustrate qualitatively this connectivity and inclusiveness.

The Pantheon in Rome serves as the first example of this fully developed relationship. Much like its traditional precedents, the Pantheon is concerned with an extremely minimal program and was once an object in a field. In its current urban context, it offers a complex, connected set of internal-external experiences. Though the object is simple, the prospect of the aspect is quite complex. The Pantheon draws the occupant in – it is an interior. The sphere imposed within a cylinder creates an unavoidable and overwhelmingly powerful center. That center is drawn into a vertical axis mundi through the introduction of the oculus. The space demands that attention be paid to the center, or away from it. Every aspect of the interior supports this reading: the octave division of niches, the paneled marble of the walls and floor, the coffered dome, the horizontal cornice banding that highlights precisely where the dome and cylinder meet, all work to reinforce a prospect to the axis mundi. Once there, an aspect to a measured representation of the geometries at play is revealed. This recursive relationship reaches an apex at the oculus. The oculus draws the eye to the sky by experientially collapsing the interior, the building, and the exterior. At the oculus, an interior that is designed to focus all of its energy to the center immediately reverses, placing the human at the center of the universe, and becoming the intersection of a universal *x, y*, and *z* axis. As soon as the occupant believes a spatial moment has been defined, another begins. Consequently, the Pantheon is both a connector and separator from the interior and the exterior – from nature, from the landscape, and from the urban. This recursive spatial relationship continues upon exiting the

rotunda. The colonnaded porch sets a liminal boundary to the plaza, which itself is an urban room designed as an interior space. The surrounding buildings read as interior walls of the space, not as exterior facades. This multiple connectivity continues in the adjacent piazza and the city beyond. The prospect of the aspect created at the oculus is so powerful that it becomes the measure of the enveloping neighborhood (Figure 12.1).

Although the purest examples of the prospect of the aspect can be exemplified in such a premodern expression, this spatial condition has continued to be an important analytical tool. The same complex interrelationships can be found in modern and contemporary examples. Aalto's Saynatsalo Town Hall, with an entirely different program, material, culture, and location, creates a similar recursive experience. Like the Pantheon, Saynatsalo offers prime examples of quality architecture, interior architecture, and landscape architecture. Saynatsalo also similarly dissolves the isolation of these scales. A centralized space is accessed through a heavy masonry threshold, employing Aalto's site planning principle wherein "a given building is invariably separated into two distinct elements, and the space between is articulated as a space of human appearance."[5] The entrance leads up and into a low, square exterior (under sky) room, a room that keeps its walls low, yet emphasizes the vertical through a measured expression of thin columns. The prospect is now forced to the surrounding vertical birch trees and the sky above. Like the Pantheon, there is a simultaneous connection to and separation from nature. Here, however, the physical relationship has changed. Standing in the oculus, instead of under and looking forward from it, the prospect and the aspect are brought into a conversation in the thin, yet simultaneously expansive, threshold. The double height volume of the council chamber continues the prospect of the aspect. The tower and its implied interior can be experienced from the central exterior space. The council chamber's interior draws attention up to the structure. It reframes the exterior with a large north-facing window, whose vertical slatted shutters mimic the vertical trees in the distance. This becomes a dialog between the two thresholds that frame the prospect horizontally and vertically. The complex is a building and an urbanism; it is

an object and a space, but most of all, it is an overlapping of interiors. It creates its context and intertwines with it (Figure 12.2).

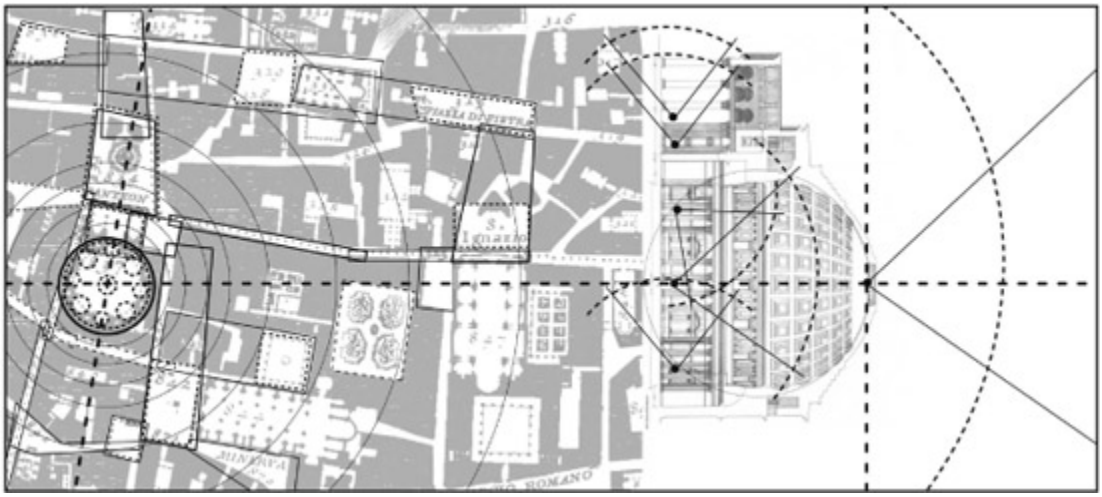

Figure 12.1 The radiating prospect of the aspect at the Pantheon (cones of vision, major and minor axis, and spatial continuum)

Image credit: author

A third, more recent example presents another application of the prospect of the aspect. The Centre George Pompidou in the Marais District of Paris establishes a different – but no less powerful – prospect of the aspect. While the Pantheon and Saynatsalo create a clear scalar escalation of the condition, in-to-out and out-to-in, the Centre Pompidou is a bit more gloriously convoluted. Here, the urban room, the surrounding city, and the building are *all* spaces/objects with the prospect of the aspect. The building essentially becomes a scaffolding to offer views from itself: views to the plaza, to the city low, and to the city high. From every aspect of the building's exterior, the prospect is offered. Richard Rogers explains the rationale behind the design:

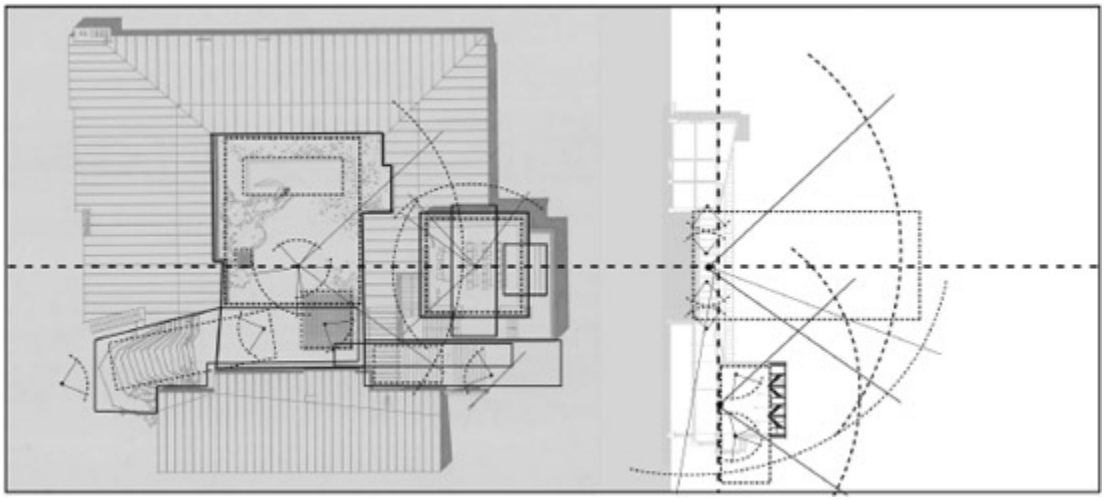

Figure 12.2 The overlapping prospect of the aspect at Saynatsalo Town Hall (cones of vision, major and minor thresholds, and interior/exterior overlaps)

Image credit: author

> The idea was that you had a public space, and you'd go up the facade of the building in streets in the air with escalators floating across it, so the whole thing became very dynamic. People come to see people as well as to see art; people come to meet people. So we wanted to practice that as theatre.[6]

The complexity of the steel frame rectangle is truly remarkable. The overlap begins on the approach from any of the Parisian streets, perpendicular or parallel. No matter how much space outlies the actual Centre Pompidou, it is consistently embedded in its context. Even when entering the plaza, the scale of the building is so encompassing that the plaza does not act as a space before the building (a space to view the object), but instead slips through the steel frame, appearing to pass under and through the ground floor. The city never stops; it passes right through the building. Simultaneously, similar to the piazza outside of the Pantheon, the Pompidou's plaza is very much an interior room in the city, entered through multiple portals. The plaza occupant is both in and out. This condition continues in the ascent and descent of the escalators. Inside the glass tubes,

the overtly bracketed "interior" space offers the prospect of the aspect to the strata of the surrounding context. From the surrounding buildings' fenestrated walls, down the street canals, over the plaza, and eventually the rooftops, all is presented in isolation and overlap. The dynamism of the escalators enables this prospect of the aspect, but it is in their careful orchestration with the steel frame and the program (the city, the museum, the art, and the French culture) that solidifies it, until final arrival at the rooftop. The frame is under, the escalators and pipes aside, any singular aspect of the object has dissipated; it has become wholly part of the prospect. Looking forward, Paris lies proffered below. The recursiveness of the prospect of the aspect continues on further toward the Eiffel Tower, which is its own example of this condition (Figure 12.3).

The rooftop of the Centre Pompidou, similar to the interior central axis of the Pantheon and the courtyard of Saynatsalo, is both a connector and separator from the interior and the exterior; from nature, from the landscape, and from the urban. The perceived interior is turned inside-out. Even though it is clearly a space with defined edges, the spatial expansiveness of the universal *x, y*, and *z* axes the rooftop provides is palpable. Conceptually conceived of as a "theater for the people," the Centre Pompidou's spatial articulations epitomize the looking at the looking from; the prospect of the aspect. Even at its young age of forty-four years, the building has already persisted through cultural shifts and continues to contribute to its environs across shifting social, cultural, and stylistic norms. "The whole idea of Pompidou was that it is a place for the meeting of all people, and the success of it was that the French took it over and it became the most visited building in Europe."[7]

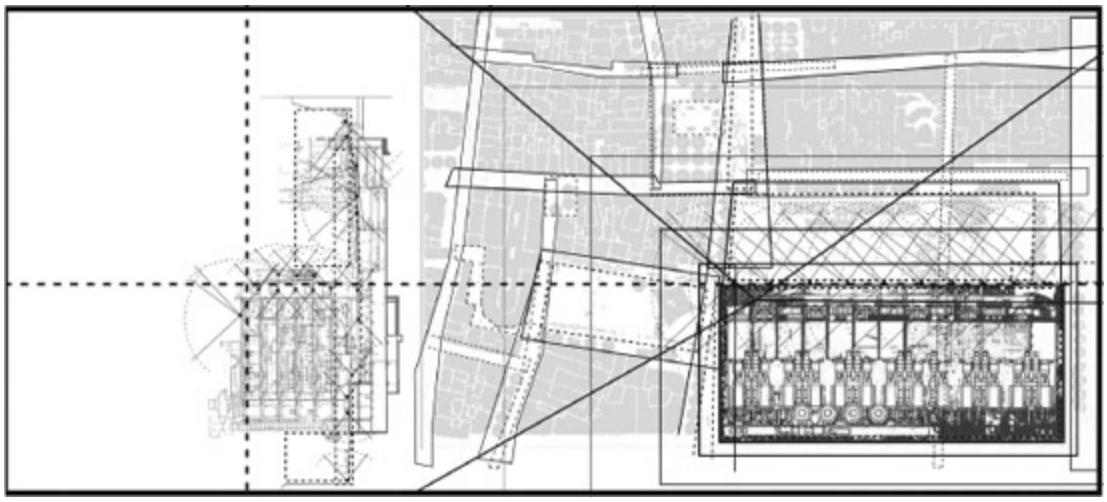

Figure 12.3 The recursive prospect of the aspect at the Pompidou (cones of vision, urban spatial layering, and horizontal and vertical inclusiveness)

Image credit: author

What is at stake?

Why concern ourselves with this analysis? Is this a mandate for more flexible and systemically integrated designs that achieve relevance through their inclusivity? Is this a call for a more collaborative and cross-disciplinary environment? Absolutely, but the present system is seemingly set up against the creation of a complex and integrated built environment. The design disciplines have been isolated professionally and legally. The benefit has been that each discipline has been able to develop its expertise, but the cost has been a built environment that is increasingly separated from its site, its context, and society. Most contemporary built contexts consist of the efficient metal building (Walmart), the nondescript strip mall, or the isolated object building (art museum). For the first two types, not only are they applied everywhere, ambivalent to their surrounding environments, they are also constructed with an ambivalence for persistence. The average Walmart, for example, is given an estimated useful life of seventeen years. In comparison to the 2,000-year-old Pantheon or even the 63-year-old Saynatsalo, this obsolescence speaks to a practice of exclusivity and

efficiency, where the primary (and some might argue only) consideration is the corporate gain, not a continued contribution to the physical environs across shifting social, cultural, and stylistic norms.[8] The practice of exclusivity affects the isolated object building as well. Todd Williams and Billie Tsien's short-lived American Folk Art Museum (2001–2014) exemplifies what happens when a design cannot maintain multiple complex connections, as noted in the Architectural Record:

> While the demolition is deeply painful to all of us who helped create it, our distress is of secondary importance to the civic, cultural, and sustainable issues the debate surrounding the building has raised. We remain deeply grateful to all who have protested this senseless and unnecessary act of destruction.[9]

This is not to say that contemporary examples of environments that exploit the prospect of the aspect are not present, nor are they solely limited to large public buildings. Examples can be found everywhere and at every scale, but the examples of isolated, nonintegrated landscapes, buildings, and interiors prevail. Too often, both the intention and the evaluation of the built environment are set as binary oppositions of this versus that: function vs. form, cost vs. quality, scale vs. scope, efficiency vs. waste, inside vs. outside, urban vs. rural, traditional vs. modern, and practical vs. poetic. The modernist tenet of "less is more" still dominates, and the "unity of inclusion" still remains difficult.

If the designers of objects and spaces hope to maintain and produce new built environments that are equally appreciated by the designer and the public, they must make the case that the prospect of the aspect should be included in both the intentions and critiques of the built environment. It is these spaces that will resist obsolescence; they will not be destroyed when their current program or style becomes outdated. As with similar projects before them, those that incorporate the prospect of the aspect will persist.

Notes

1 "Aspect" and "prospect", *Merriam-Webster.com*, 2015, www.merriam-webster.com/.

2 The Droste effect identifies a technique in art that creates a recursive picture in which a smaller version of the image is placed inside itself repeatedly. This effect is also referred to as *mise en abyme*, which generally describes the visual experience of standing between two mirrors, seeing an infinite reproduction of one's image. Mary McMahon, "What Is the Droste Effect", *Wisegeek*, www.wisegeek.com/what-is-the-droste-effect.htm (accessed 26 April 2015).

3 Robert Venturi and Museum of Modern Art (New York), *Complexity and Contradiction in Architecture*, 2nd ed. (New York and Boston, MA: Museum of Modern Art, 2011), p. 24.

4 Ibid., p. 23.

5 Kenneth Frampton, *Modern Architecture: A Critical History* (New York: Oxford University Press, 1980), p. 197.

6 Richard Rogers, "The Pompidou Captured the Revolutionary Spirit of 1968 – Richard Rogers", *DeZeen Magazine*, 26 July 2013, www.dezeen.com/2013/07/26/richard-rogers-centre-pompidou-revolution-1968/ (accessed 5 April 2015).

7 Ibid.

8 Estimated total useful life (years) = (Property and equipment, gross – Land) – Depreciation expense for property and equipment, including amortization of property under capital leases = (182,634 – 26,261) ÷ 9,100 = 17. "Wal-Mart Stores Inc. (WMT)", *Stock Analysis on Net*, www.stock-analysis-on.net/NYSE/Company/Wal-Mart-Stores-Inc/Analysis/Property-Plant-and-Equipment#Estimated-Total-Useful-Life (accessed February 2015).

9 "MoMA Begins Demolition of Folk Art Museum Building", Architectural Record, 14 April 2014, http://archrecord.construction.com/news/2014/04/140414-MoMA-Begins-Demolition-Folk-Art-Museum.asp (accessed 5 April 2015).

Chapter 13

The waiting room

Transitional space and transitional drawing

Susan Hedges

> What great genius invented the waiting room?
> Every sublime idea no doubt is simple, but
> Simplicity alone is never enough.
> A cube sequestered in space and filled with time,
> Pure time, refined, distilled, denatured time
> Without qualities, without even dust … [1]

The waiting room can be imagined as a frequently visited place, a room to linger, to sit or stand, to walk and converse. It is a transitional point before entering or moving to another room, in which no actual movements of the journey occur, but where time is implied. It is a place where our attention may be directed toward the fact that the passage of time has slowed down, until later it seems as if no time has passed at all.[2]

The waiting drawing offers a sense of marking time, an instant of concentrated activity, perhaps with whatever drawing instrument and surface is ready at hand. A seized drawn moment is an attempt to possess

time; these kinds of drawings may be followed by further transitional drawings, repeating moment from moment. The waiting drawing described in this chapter is seen not as an answer, but rather, as a marking of time. It is explored through the waiting room as a point of mobility and temporary arrest, a place where the fixed and mobile converge. The waiting room, suspended in time and structure to be entered and explored, becomes an architecture that renders itself uninhabitable to the extent that we understand aesthetic experience – not as a recollection of a timeless reality, but as an experience that is as if it had no duration.[3]

This chapter models a narrative of the waiting room with a study of the Auckland Railway Station (1928–1930) designed by Gummer and Ford and Partners. In particular, singled out for closer examination is "Sheet No. 24 Details of Ladies' Waiting Room," as a means to consider the waiting drawn detail in the now obsolete Auckland Railway Station. The waiting drawing is represented as a paneled interior of recurrence, an experience of time, and a prediction of time on itself. The sheet simultaneously shows complexity, incompleteness, and a promise of structured waiting.

The waiting room and the waiting drawing

Waiting is a common human experience. Often the impression it conveys is one of anxiety, boredom, and anonymity. People are distributed among rows of seats, figures thrown together at the mercy of someone, or something for which they are consigned to wait. They wait in separation from each other, unspeaking, or in chattering groups. "All things come to those who wait," implies an understanding of waiting that is anything but resigned, accepting, and inevitable. The patience of waiting becomes a vigilant attentiveness, perhaps surfacing amid uncertain respites, an arduous experience of unsure stillness affected by time, speed, and sluggishness.

Walter Benjamin writes in *The Arcades Project* that "waiting is in a sense the well-varnished interior of boredom, that rather than pass the time, one must invite it in."[4] Benjamin equates boredom with waiting. To wait "is ultimately the same as refusing the idea of change, and this refusal

suggests that boredom and waiting are figures of resistance to the empty recurrence of history."[5] Literary theorist Mieke Bal writes of the pause as the moment in a waiting room before entering or moving to another in which the narrative remains stationary. It is a pause where our attention is directed toward the fact that the passage of time has slowed down, a disruption to the flow of time and function, and a silence in the construction of the narrative.[6]

Waiting for a train at the station, building rhythms are slowed, a kind of stillness results, a pause in time and movement. Expecting an imminent arrival or departure at an indicated time, timetables become links between the present and the future. The waiting for an event the occurrence of which is certain – although not always on time, or completely uncertain, even when the train is delayed – the time and place become an interstitial period.

Waiting drawing and the waiting detail

For some, the waiting drawing is a moment to capture an instant in a few quick strokes, a transitional drawing that is a marking of time, perhaps a careless regard for passing hours rather than a search for an answer. The transitional drawing is made up of differences in weight, interval, and motion, moments of intense activity, of getting something down and seizing the moment. Drawing as waiting or expectation is a projection into the future.[7] As the waiting drawing may reside in the long process of thinking, making, breaking, and remaking, time figures as both contemplative and instantaneous. The specific is approached with a fastidious attention to the unseen – the invisible – and allowing in retrospect for the invisible to be seen. It is a reflection of the drawing process itself, but also an overriding awareness that in order to break new ground, each moment of doing contributes to another sense of the "whole." For the drawer, these moments of doing, looking, thinking, and reflecting are critical within the process of making a piece of work, but on completion of the work they also provide a

time for thought.[8] Making the drawing becomes a way of seeing time; a spatializing of time.

For architect Marco Frascari, architectural drawing is a heuristic device. "It is a slow process of architectural sapience based on the ideas of lingering, savoring, and touching. It is based on the 'adagio' time and common places, proverbs, or rules of thumb."[9] For Frascari, labor-intensive lines offer a sensory understanding of architecture. Drawing and waiting are expectations – a projection into the future.[10] Labor-intensive architectural drawings, material and substance, the conceiving of a place to wait. A lingering line, a tactile savoring, the same as slow time, sheets that are marked, inked, penciled, or brushed, labor-intensive architectural drawings, for users that cannot be predicted or estimated. Frascari writes:

> Slowness is often related to negative values of clumsiness, disinterest, sloth, and tedium, conditions that do not include the positive effects resulting from paused, well-thought, and safe attitudes. Architectural drawings are islands of slowness within the stormy sea of the pseudo-fastness of the building industry.[11]

In some respects, the waiting drawing can be seen as an initial graphic portrayal of an idea, directly from observation, or the memory of something seen. Perhaps a preconceived plan, a projection of possibility, the drawing is an idea generation, development, and modification. The waiting detail in this light is a drawing performed in order to possess time, to capture the possibilities seized in the moment; a moment of actualization.

The waiting room and the railway station

Construction of the Auckland Railway Station by architects Gummer and Ford began in 1928 and was completed in 1930. It was the largest contract undertaken in New Zealand at the time.[12] Red brick set between classical compositions of Corinthian columns with entablature, Roman arches, and coffered ceilings, a monumental entrance with a grand foyer, and elaborate

systems of scale and surface make up the station. The building was reported at the time to

> … offer something new to New Zealand architecture in the way of interior decoration, and it is safe to say that many Auckland people will be astonished, when they enter the station for the first time, at the bold employment of colors in the decorative scheme. No other building in Auckland depends so literally on the artist's palette for its mural ornamentation.[13]

Arrival at the railway station is a passage through a grand lobby to a long concourse, a movement toward a large space housing the static pleasure of architectural detail (Figure 13.1). The appeal of the building lies in its stillness and sculptural depth, in its implied resistance to the world of speed, surface, and image. From here, people depart for the sea and the mountains, a complex network connecting distances, people, and places. Platforms bristle with anticipation, the clutter of rushing people, porters, and carts. The anticipation of the landscape to be experienced is colored by the staccato rhythms that connect ticket counters, corridors, and waiting rooms.

Figure 13.1 Auckland Railway Station Ticket Lobby

Image credit: Susan Hedges

In the Auckland Railway Station, spaces for arrival and departure extended the small scale of the city; boundaries between town and countryside fell away to railway stations, transfers, junctions, and stops. For Auckland, remote places began to connect. Destination signs and plaques of cities and towns along the length of the concourse implied a sense of

distance. An impressive masonry façade and a vast open concourse, roofed with glass and supported by iron and steel trusses, the station became stalled in its tracks a mile or two away from the center of the city, the size of the station an ungainly interloper.

Conceived as a grand railway station, the building was never tested to its full capacity.[14] Its intended use as a point of convergence of the city's movement, a connector for trains, cars, radio signals, trams, and pedestrians, as well as money, goods, and information, was perhaps, for a moment, actualized in the early days of its construction; a "swirling manifold of circuitry, switching points and deterritorialized, non-grounded flows."[15] In the 1990s, however, its use shifted to student accommodation. The exterior shell remained relatively intact under a "category 1" rating of the Historic Places Trust.[16] The interior changed dramatically. Along the lengthy concourse, three rooms have become TV lounges, and the ticket counter and the entrance have been preserved. What has been lost?

> Beyond the vestibule is another striking feature of the layout, a broad concourse which gives access to all the adjuncts of a modern station including dining room, refreshment buffet, waiting rooms, barber's shop, dressing rooms, lavatories, post, telegraph offices, ambulance, book stall, fruit stall, etc. The night traveler will here find facilities for cleansing, rest, and refreshment in preparation for his day of business or pleasure in the city. Here, the tired suburban shopper will obtain afternoon tea daintily and restfully served. Such services and amenities, though well established abroad, will be to a large extent experimental with us, and it will rest with the public to give them their sympathy and support so that they may be developed to their fullest usefulness.[17]

The ladies' waiting room

The waiting room sits somewhere between location and dislocation, a semi-public gateway to private places, a somewhat ambiguous place, occupying

an uncanny position within the larger scheme of the building (Figure 13.2). Little has changed in this 40-by-15-foot room, a combination of movement, stasis, space, and events, as the building has been assembled and disassembled into a melancholic – and somewhat comic – character. The concourse and its adjoining waiting rooms at the edge of the city appear unfamiliar and unhomely.

The ladies' waiting room is a dark interior with paneled walls. A clock and a mantelpiece face each other below a kind of Wedgwood ceiling in white and blue, where three silver chandeliers were once suspended from the ceiling.[18] Time slows as one enters the room, thickened with its connection to the past of the railway station, a golden age of travel in the history of Auckland City. Dark paneled walls, ornate windows, and a clock reveal a transitory space in a transitory building for women who wait. The name of the room memorializes movement, speed, and stillness. The grand notions of progress, moment, and technology have become an uncanny room for temporary occupation and a place to wait.

The waiting room is a semi-private transition to the fully public space of the concourse, an upholstered, paneled haven. Some people will not pass through; it is a place for waiting and a peculiar limbo used before or after travel. The opportunity to construct narratives out of static scenes through repetitive waiting and minimal signs of activity – the checking of a clock or lipstick, an exchange of glances – sees the room as a threshold between stasis and movement. A transient population is viewed from the dark interior through to the bright light of the concourse, neither fully public nor fully private, an indeterminate character.

Figure 13.2 Auckland Railway Station ladies' waiting room

Image credit: Susan Hedges

The room is caught between different scaled times and spaces. They meet one another in pockets of unrelated and ephemeral interiorities. Social roles and conventions have regulated, determined, and produced the interior; etiquettes and excluding boundaries construct and save the waiting interior, a constructed possibility of privacy. The nature of stillness, contemplative and instantaneous, the waiting room is positioned indifferently in a moment of stasis, originally against taxis, tickets, guides, and porters. Timetables, arrivals, and departures, the starting point for a new journey, sees the waiting room as a moment of running in place. Today, the room still waits, empty, caught singularly against a building that has changed. The clock face disassociates time, spatially projected in vision in a rationalized notational form. Vanquishing time, "the clock reduces fraught,

immanent time to a single transcendent time, it relates all events to a single 'thin' duration that is general – the same for everyone, for all processes."[19] For the Auckland Railway station:

> There are sixty-two clocks in the station, all controlled from one master clock in the stationmaster's room. Two of the clocks are in the vestibule and two in the concourse, one is in the general waiting room, another in the ladies' waiting room, and there is one in the dining room and one in the coffee room. Clocks, indeed, are all over the place, and one has scarcely to turn one's head to see the time.[20]

Waiting drawings

Architectural critic Sanford Kwinter writes in *Architectures of Time* that modernism changed the theories of time "in which time no longer remains spatialized in order to furnish the stable ground or backdrop for phenomena, but meshes inextricably with them, and forms the new rule of their endless and aleatory proliferation."[21] The calendar and the clock are ways of seeing absolute time but with no physical reality. Plans, sections, and elevations are horizontal-vertical slices in a moment of time, a representation of space rather than time. What of the attempt to draw time, what of the gradual changes to space through the design process and possible future occupations?

The drawing set consists of seventy-eight drawings on linen sheets beginning with site plans and track lines, finishing with detail to stanchions and cross sections of the subway. Ornate, partially drawn details show wooden panels and fluting, plastered false ceilings, pierced carvings, bronzed radiator grills, beveled mirrors, marble mantelpiece, openings to the concourse and ladies' lavatory, and a place for the clock. Step by step, decisions have been made and project plans redrawn and newly drawn. Every stroke counts; every screw has to be in the right place. The waiting room, like many interiors, is transient, subject to fashion and impermanent

materials, to short lives with frequent renovation. The ladies' waiting room appears caught between moving occupation, its surfaces emanating the atmosphere of its past.

Architect Mark Wigley suggests that the surface wraps the atmosphere: the outer visible layer of an invisible climate where architecture moves from the initial rough sketch to finely calibrated working drawings; the lines on paper without atmosphere cleared of any effect, nothing to threaten the authority of the line.[22] "Sheet No. 24 Detail to Ladies' Waiting Room" holds to norms and conventions, recording a finished room. Running dimensions, tolerances, and building materials define the space between building elements, their dimensions, the recording of the building, and the coordination of the structure.[23] Sheet No. 24 can also be seen as a decorative surface that exudes an atmosphere that the viewer of the drawings is meant to experience, something of the building's atmosphere. Drawings are atmosphere simulators, and even the most abstract lines produce sensuous, unpredictable effects (Figure 13.3).[24]

The plan and section, to be imagined as horizontal or vertical slices, simultaneously reveal solids and voids its surfaces and nodes, an improbable abstraction representing a multitude of constructed spatial ideas; the waiting line representing a surface that has remained still while the neighboring interiors have shifted.

What of the waiting room?

For the remnants of the station, the loss itself is significant: a fragment of a living thing that people once built their lives around, and of which nothing much remains. The railway station, choked by the indifferent architecture of apartments that surround it, has become a forlorn building and a melancholic interior where the fixed and mobile converged.

With a partial dismembering of its interior, the building is a victim of time and place; no throng of people, no busy porters, just an empty lobby and an even emptier waiting room. The ladies' waiting room still conjures a scene where absence becomes the room's principle feature. For part of its

history, the room held people, furniture, luggage, a warm radiator, and a clock above the mantelpiece. The empty room and somewhat deserted building offer a drought of sound, an aural desert where light enters unobserved over unburdened chairs. The room is unable to be read as part of a larger whole. Time has slowed, and passing circumstance sees other parts of the building move in other directions. The waiting room has an unwitnessed existence; walls, ceilings, doors, and windows are cupped around a space and have held it for a while. Something else occupies this mysterious emptiness and the different sounds that time makes in passing.

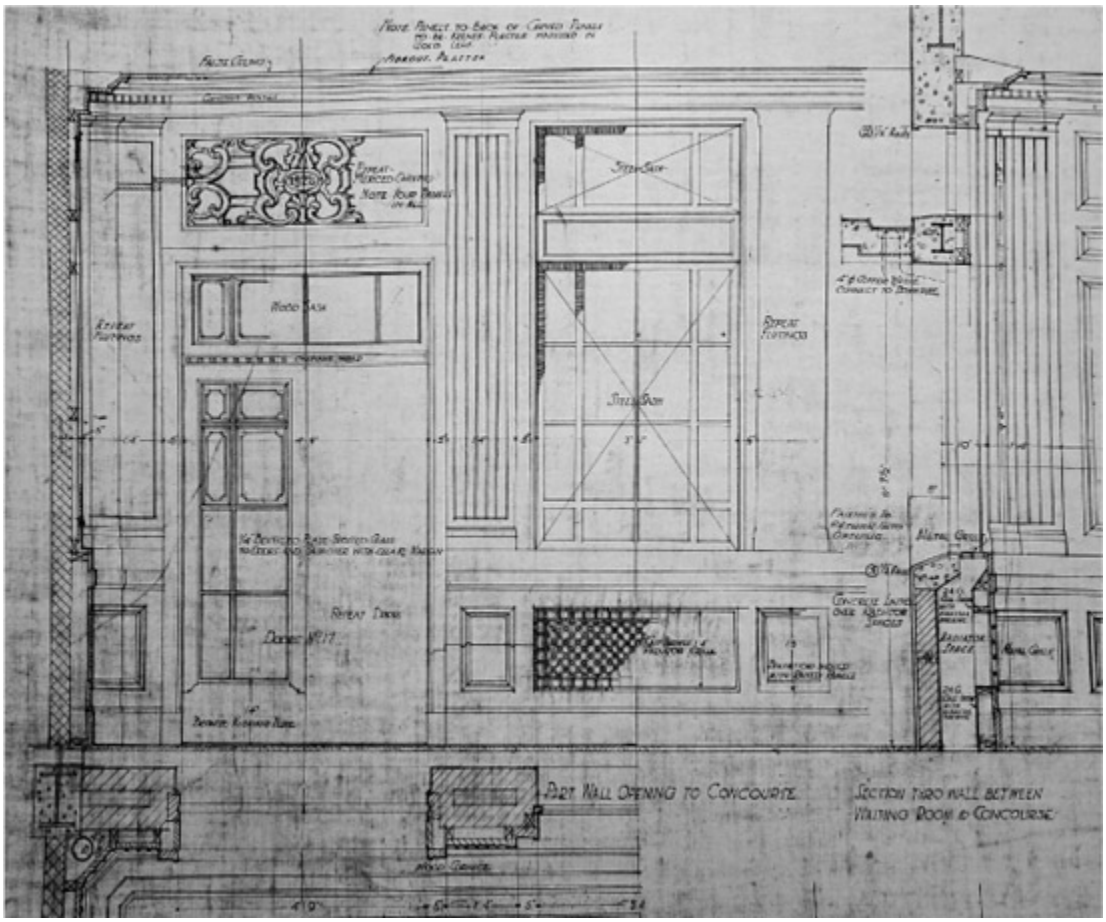

Figure 13.3 Detail to Sheet No. 24 Details of Ladies Waiting Room, August 1927, Scale ¾", ¼" and Full Size, Gummer and Ford, Architects and Structural Engineers, Auckland Railway Station, 1010 × 640 linen, original with annotations. Image credit: Ministry of Architecture + Interiors Ltd.

The waiting drawing intertwines, connects, and pulls taut. It undoes and reconnects the different strands, a marker for something that was emerging, something provisionally knitted together that has permitted us to undo and redo in order to forestall premature closure. This chapter is not an attempt to restage history as it was, but rather, it explores historical knowledge as an ongoing reconstruction in the present located somewhere between fact and fiction. The remnant lobby and waiting rooms, as points of mobility and temporary rest, are caught in time where many voices have just left the building. For Frascari,

> The best part begins when the plan is torn to pieces by history, defeated by events, chewed by time; when it reaches us as an incomprehensible collage of forgotten memories as an unexpected and enigmatic structure, as existential lust, as pure decoration.[25]

Notes

1 Howard Nemerov, *The Collected Poems of Howard Nemerov* (Chicago: University of Chicago Press, 1977), p. 459.

2 Mieke Bal, *Narratology: Introduction to the Theory of Narrative* (Toronto: University of Toronto Press, 2009), p. 108.

3 Karsten Harries, "Buildings and the Terror of Time", *Perspecta* 19 (1982): 59–69, 64.

4 He goes on to suggest, "to pass the time (to kill time, expel it): the gambler. Time spills from his every pore. – To store time as a battery stores energy: the flâneur. Finally, the third type: he who waits. He takes in the time and renders it up in altered form – that of expectation." Walter Benjamin, *The Arcades Project; Translated by Howard Eiland and Kevin McLaughlin; Prepared on the Basis of the German Volume Edited by Rolf Tiedemann* (Cambridge, MA: Belknap Press, 1999), p. 107.

5 "Through a dialectical shift in the experience of time, and opening toward a change beyond all prediction. Boredom is always the outward sign of unconscious happening… . One must not waste time but must load time into oneself … " Ref (5.1.162, 164) cited 7776 in: J. Rolleston, "The Politics of Quotation: Walter Benjamin's Arcades Project", *PMLA: Publications of the Modern Language Association of America* 104 (1 January 1989): 13–27, 7, 19.

6 Mieke Bal, *Narratology*, p. 108.

7 Derek Pigrum, "Drawing, *Dasein* and the 'Ready-to-Hand'", *Studies in Material Thinking* 4 (2010): 10.

8 Angela Eames, "Embedded Drawing", in *Writing on Drawing: Essays on Drawing Practice and Research*, ed. Steve Garner (Bristol and Chicago: Intellect, 2008), p. 136.

9 Marco Frascari, "Lines as Architectural Thinking", *Architectural Theory Review* 14, no. 3 (2009): 200–212, 201.

10 "Pulling pieces of geometry, geology, alchemy, philosophy, politics, biography, biology, mythology, and philology from alien territories, architects should write and draw with hesitation, discovering the multiple aspects of architectural graphesis, a generative graphic process understood in its slow making." Marco Frascari, "Lines as Architectural Thinking", *Architectural Theory Review* 14, no. 3 (2009): 200–212, 202.

11 Marco Frascari, *Eleven Exercises in the Art of Architectural Drawing: Slow-Food for the Architect's Imagination* (New York: Routledge, 2011), p. 29.

12 William Henry Gummer and Charles Reginald Ford were prominent architects in Auckland, beginning their practice in 1923 and finishing in 1961. Trained under the beaux-arts traditions at the Royal Academy of arts, they are responsible for some of the architectural landmarks of Auckland City, including the New Zealand Insurance Building (1914), the Guardian Trust Building (1921), the Dilworth Building, (1926), and the Domain Wintergardens (1928).

13 "Railway Decoration", *New Zealand Herald* LXVII, no. 20698 (18 October 1930): 13, Papers Past, National Library of New Zealand Te Puna Ma¯tauranga o Aotearoa, https://paperspast.natlib.govt.nz/newspapers/NZH19301018.2.129 (accessed 28 December 2014).

14 Due to Auckland City Council's decision not to proceed with an underground system, the building due to its awkward location became dislocated from the city. The New Zealand Railway service later abandoned this station for relocation to the Britomart Transportation Centre. It was sold during the privatization of the rail network in the 1990s, and has since been converted to student accommodation by ADC Architects.

15 Sanford Kwinter, *Architectures of Time: Toward a Theory of the Event in Modernist Culture* (Cambridge, MA: MIT Press, 2001), p. 86.

16 "Heritage New Zealand Pouhere Taonga", 1985, www.heritage.org.nz/the-list/details/93&sm= (accessed 27 March 2015).

17 W.R. Davidson, "Auckland's New Railway Station: The Northern Portal of the N.Z.R.", *The New Zealand Railways Magazine* 2, no. 6 (1 October 1927): 26–36, 32 (accessed 4 April 2014).

18 “Railway Decoration”, *New Zealand Herald* LXVII, no. 20698 (18 October 1930): 13, Papers Past, National Library of New Zealand Te Puna Ma¯tauranga o Aotearoa, https://paperspast.natlib.govt.nz/newspapers/NZH19301018.2.129 (accessed 28 December 2014).

19 Sanford Kwinter, *Architectures of Time*, p. 21.

20 “Spacious Railway Yard”, *New Zealand Herald* LXVII, no. 20729 (24 November 1930): 9, https://paperspast.natlib.govt.nz/newspapers/NZH19301124.2.168.22 (accessed 28 December 2014).

21 Sanford Kwinter, *Architectures of Time*, p. 36.

22 Mark Wigley, “The Architecture of Atmosphere”, *Daidalos* 68 (1998): 18–27, 26.

23 Anette Spiro and David Ganzoni, eds. *The Working Drawing: The Architect’s Tool* (Zurich: Park Books, 2013), 145.

24 Mark Wigley, “The Architecture of Atmosphere”, pp. 18–27, 27.

25 Marco Frascari, “Plans”, *Terrazzo* 1 (1988): 96–131, 97.

Chapter 14

Spatial seductions

The everyday interiorities of Marcel Duchamp, Edward Kienholz, and Pepón Osorio

Pablo Meninato

> *Its surface seems slick, perhaps reflective, often translucent, skin-like, visually viscous; its form appears curved, ballooned, bulging, segmental, warped, and twisted; its structure looks webbed, ribbed, and vaulted; its materials might be synthetic, resinous, metallic, and alloyed; its interior would be cave-like, womb-like, tunneled, burrowed, and furrowed; its furniture and fittings are envisaged as soft, almost porous in texture, cast or injected, molded, and sensitive to heat and light... . The techniques of its design are drawn ... from animation software that generates its complex forms with the help of digital avatars that work, independently of the architect, to produce multiple iterations of possible combinations.*[1]

With this somehow lyrical description, Anthony Vidler outlines one of the principal tendencies in contemporary architecture, characterized for its perennial intention of creating new and unprecedented production. A similar survey of an array of recent design magazines reveals multiple images of these sculptural forms with specific regard to interior architecture: carved spaces, undulating ceilings, and patterned fabric surfaces. Referred to as blobs, fabrications, topographies, parametrics, or late modernisms, these projects convey the unlimited possibilities of innovation, whereby only budgetary constraints would pose restrictions to such extraordinary concepts.[2]

The origins of these emerging interior architectural explorations may be traced to avant-garde theoretical influences of suprematism, constructivism, and de Stijl in the early modern movement. These projects are characterized by their relentless rejection of tradition, search for abstraction, and creation of spatial forms devoid of figurative iconography. As demonstrated in Theo van Doesburg's manifesto *Towards a Plastic Architecture* (1924), the Dutch de Stijl group developed what is perhaps the clearest embodiment of similar objectives:

> The new architecture possesses no single passive factor. It has overcome the opening (in the wall). With its openness the window plays an active role in opposition to the closedness of the wall surface. Nowhere does an opening or a gap occupy the foreground; everything is strictly determined by contrast.[3]

In a series of alternatives titled *Contra-Construction*, Van Doesburg explored many of the ideas introduced in his manifesto. Similar to the modus operandi of interior architecture, his project blurs the distinction between inside and outside spaces, top and bottom, and front, side, and rear elevations. One of its most extreme ideas was the elimination of the most conventional architectural elements, such as doors and windows. The door, for example, rather than being an element in its own right (consisting of a frame and a panel) is conceived as the absence of a wall. Likewise, the

windows are not punctures in the wall, but rather openings that are left between the planes. The project serves as a formal laboratory whose ultimate goal appears to substantiate the claims of the manifesto.

This chapter analyzes the spatial works of Marcel Duchamp, Edward Kienholz, and Pepón Osorio to unpack notions of inheritance, adaptation, reuse, and social agency sharing common motivations with interior architecture. The spatial/object-oriented process of these artists offers a critical lens for the emerging theoretical discourse surrounding the connected disciplines of interior architecture and adaptive reuse.

Duchamp: doors and windows stripped bare

Other artistic endeavors contemporary to these early twentieth century developments manifested an alternate departure from conventional art processes, whose results led away from avant-garde formalism. The works and ideas of Marcel Duchamp represent an alternative avant-garde that dwelled on conceptual and intellectual elaborations rather than formal and visual conditions. Most of Duchamp's work contradicted the most fundamental notions of modern art, such as the rejection of the past or the search for abstraction, proposing instead a fresh look at existing forms and a reconsideration of the figurative component in art.

In the first decades of the twentieth century, Duchamp started exploring the subtle and hidden qualities of everyday objects and artifacts, eventually speculating on the notion of designating some of those objects as works of art. The anecdote in which Duchamp, together with Brancusi and Léger, went to an aviation fair and, while standing in front of an airplane, proposed, "Painting has come to an end. Who can do anything better than this propeller? Can you?" is quite well known.[4] Duchamp himself would elaborate the answer to that question with his *Roue de bicyclette* (*Bicycle wheel*, 1913). With this work he reiterates his fascination with industrial artifacts, but his attention now resides in the displacement of those objects; the wheel appears unexpectedly installed upside-down and bolted to a stool, therefore removed from its expected function. This seemingly simple effect,

later known as "readymade," redefined the most fundamental conception of the artistic act, since the artist is no longer the one who produces the work of art; instead, he chooses it.

Unlike other modern artists, Duchamp did not participate in collaborative projects with architects or designers.[5] It should be noted, however, that many of his works display an original consideration of architectural elements. In what could be interpreted as an alternative to Van Doesburg's experimental *Contra-Construction* house, several of Duchamp's works reinterpret the attributes of the most conventional architectural openings, namely doors and windows. With his *Fresh Widow* (1920), a work he later defined as "semi-readymade," Duchamp challenges the function of the architectural element, a subject that he would also consider with the conception of his doors.[6] On its first impression, *Fresh Widow* appears to be a reduced scale version of traditional French window – hence the pun implied in the title the work. Instead of glass, the panels were made of wood and wrapped with black leather (a clear association with the widow), therefore blocking the views. *Fresh Widow* could be interpreted as the re-creation of one of the most conventional building components, but by removing its expected function to see *through*, Duchamp deconstructs its meaning, which is to say, the window does not work as it should. The title and the actual artifact constitute a sort of oxymoron: an anti-window. With these operations, Duchamp redefines the parameters that define the notion of the window; deprived of its conventional function it is confirmed as an idea, an abstract and intangible concept susceptible to innumerable variations. In her book *Marcel Duchamp*, Anne D'Harnoncourt quotes Duchamp's comments in regards to his considerations of the window as an idea:

> I used the idea of the window to take a point of departure, as … I used a brush, or I used a form, a specific form of expression, the way oil paint is, a very specific term, specific conception. See, in other words, I could have made twenty windows with a different

> idea in each one, the windows being called "my windows" the way you say "my etchings".[7]

Another architectural element persistently examined by Duchamp was the door. Similar to his windows, the door is usually considered as a displaced object, with its functions canceled or fundamentally altered. His *Porte: 11 Rue Larrey* (1927) serves as an example of this tactic, a work that displays a quite distinctive feature: it allows for the panel to be simultaneously open or closed in two adjacent openings. Because of its location and type of hinge, the door opens toward a room while at the same time it closes toward the other. As with most of his oeuvre, the piece doesn't stand out for its spectacularity, but for its subtle irony. The originality does not lie in the door itself – in fact, it is a standard and conventional element – but in its corner location and its particular swing and operation. With this simple procedure, Duchamp achieved a seemingly impossible condition: a door is that is simultaneously open and closed.

Duchamp's assemblage *Étant donnés: 1° la chute d'eau / 2° le gaz d'éclairage* [*Given: 1. The Waterfall, 2. The Illuminating Gas*, 1946–1966] represents possibly his most famous door. Built in absolute secrecy during the last twenty years of his life (first with his mistress Maria Martins, who served as a model for the sculpture, then with his wife Teeny fulfilling that role), it is certainly his most enigmatic work.[8] *Étant donnés* has been interpreted as both an art piece that contradicts his earlier works and as the conclusion of his oeuvre. On the one hand, the work can be seen as a denial of the readymade, a departure from nonretinal art, and a retreat from ambiguity; all aspects present in Duchamp's previous works. On the other, it is a work that, above anything else, interrogates what constitutes a work of art, an ensemble of uncertainties to be unveiled or interpreted by the viewer.

Visiting *Étant donnés* for the first time can be a strange experience: an old wood door without any indication or sign stands in what seems to be a museum's cul-de-sac. Only the attentive or informed visitor will notice that the door has two small holes at eye level, so the only possible action is to spy, to satisfy the voyeuristic curiosity and see what is

behind the door. When leaning in to peek through the holes, the surprise of the observer may be overwhelming upon discovery of a hyperrealistic sculpture, where a naked female body appears lying on the grass, her legs splayed wide open while one of her hands holds a gas lamp. *Étant donnés* is an invitation to a voyeuristic experience, capable of provoking shame, rejection, or allure. We know Duchamp brought the double wood door from Cadaqués, Catalunya; it was displaced into an unexpected context, where it was reassembled and perforated.[9] The operation shares some similarities with *Porte, 11 Rue Larrey*; in both cases, there seems to be a renewal of meaning without the involvement of a formal transformation. A comparison between both of Duchamp's doors offers a paradox: while *Porte* surprises because it can be always open, *Étant donnés* was conceived to be permanently closed. By inserting the gate into a new context and making it inoperable, the architectural element doesn't make sense. In its renewed function, the door has become a miniature window.

With the notion of the assemblage, Duchamp introduced an alternative approximation to what constitutes the realization of interior space and the ambiguous status of architectural elements, where the emphasis is placed in metaphorical and allegorical associations rather than formal or spatial configurations. In its various iterations, modernism appears to have been fixated on a continuous search for abstraction and an irrepressible will for creating new forms, a position that overlooked themes such as desire, eroticism, or unpredictable associations. One of the artistic avenues that derives from Duchamp's assemblages was installation art, namely the tableau, which is fundamentally a three-dimensional collage where the space or scene is transformed not by means of formalistic manipulations, but through the disparate displacement and combination of ordinary objects.

Kienholz: postcards from the hospital

An interesting characteristic of the contemporary tableau, particularly those developed in North America, is that for many authors it became a vehicle

that facilitated exposing political or social issues. In the case of Edward Kienholz and Pepón Osorio, two artists who were able to inject allusions to a number of contemporary subjects into their installations in quite different contexts (Kienholz in California, and Osorio in New York City and Philadelphia), including the Vietnam War, racism, cultural displacements, and the different forms of violence present in American society. While Duchamp conceived the assemblage as a medium to convey the absurdities of life and the latent power of the erotic, Kienholz and Osorio utilize similar tactics to expose the apparent or implicit conflicts that pervade our contemporary world.

Two tableaux by Kienholz suggest a number of correspondences with Duchamp's work, particularly his investigations with the effects provoked by the voyeuristic experience. *The State Hospital* (1966) is essentially a square, dirty-white metal container; one of its sides has a permanently closed door, and to its left, a grey sign that reads "WARD 19." The single opening of this quasi-hermetic box is a small barred window placed at eye level at the center of the door. Just like with *Étant donnés*, the viewer's only option is to approach the cut in the door and try to spy what is hidden inside the container. In this case, the scene is provocative: a single bulb illuminates two similar creatures lying on metal bunk beds, each shackled with a leather strap to the bed's frame. Both appear naked, with their genitals exposed, their heads made from illuminated fish bowls (Figure 14.1). The scene conveys immense pain and sadness, perhaps a stripped-bare reconstruction of the sadistic scenes that the artist witnessed himself. Twenty years before the conception of the piece, Kienholz worked in a mental hospital in Lake Medicine, Washington.[10]

If *The State Hospital* is about an encapsulated, enclosed, and claustrophobic space, *Portable War Memorial* (1968) is a full-frontal, overexposed tableau (Figure 14.2). The viewer's first impression is of an uncanny agglomeration of domestic furniture, consumer advertisements, and political posters, all elements coexisting next to a banal and prosaic lounge space. Upon closer inspection, the work denotes two clearly differentiated zones. In the left zone, the attention is drawn to the iconic

image of marines embracing a flagpole, then to an inverted white cross on a black ground, an "Uncle Sam" poster, and the disturbing presence of a dwarfed figure encapsulated in a trash can (the image resembles the 1950s iron lung treatment for polio), whose figure displays just head and legs while a trashcan substitutes the rest of the body. This is the "space of war," which illustrates the different forms of violence associated with it, including the subliminal glorification of the propaganda tokens. The right zone displays several lounge tables and chairs, an umbrella, a Coca-Cola vending machine, and the grainy image of a smiling couple sitting at a diner with a leashed, expectant dog sitting at their feet. This is the area Kienholz described as "business as usual," the perverse and perhaps indispensable side of American wars abroad.[11]

Figure 14.1 Edward Kienholz: *The State Hospital* (1968) Mixed media tableaux (245 × 360 × 295 cm)

Copyright Kienholz. Image credit: L.A. Louver, Venice, California. Collection of Moderna Museet, Stockholm.

Figure 14.2 Edward Kienholz: *Portable War Memorial*, 1968. Mixed media tableaux 114 x 384 x 96 in (289.6 × 975.4 × 243.8 cm)

Copyright Kienholz. Image credit: L.A. Louver, Venice, California. Collection of Museum Ludwig, Cologne

Osorio: displacements in the Barrio

Pepón Osorio uses similar artistic tactics to those of Kienholz, although the narratives investigated in each body of work are distinctly different. A fundamental characteristic of Osorio's work lies in his particular background; born and raised in Puerto Rico, he moved to New York City in his early twenties where he trained and practiced as a social worker. This dual condition of outsider and listener of stories allows Osorio to reflect on the conflicts that emerge within the Latin American diaspora in the United States – an array of bilingual and bicultural communities variously defined by race, ethnicity, prejudice, violence, and displacement.

Operating simultaneously as dioramas, spatial installations, or episodic fragments of interior design, Osorio often refers to his work as "social architecture," a notion that becomes palpable in his installation *Badge of Honor* (1995), consisting of two adjacent rooms, each one representing

contrasting realities (Figure 14.3).[12] The first is "the father's room," a prison cell characterized by its austere minimalism framed by the black iron bars of the permanently closed prison gate. The other is the "son's room," a space saturated with typical teenage belongings and objects, such as a red bicycle, a beach ball, posters, trophies, picture frames, and a Puerto Rican flag. The massive wall that separates the two spaces may be interpreted as both the impediment and the link between both characters. It may be considered as the symbol of this implausible connection, since each side of the partition displays a projection of father and son talking to each other (or to themselves?), sharing their feelings, thoughts, and longings. The title of the piece is disturbingly ironic, referring to the eerie pride evident in some kids whose fathers are incarcerated, a "badge" that ostensibly indicates the courage of those serving time.

Figure 14.3 Pepón Osorio: *Badge of Honor*, 1995. Mixed media installation.

Image credit: Pepón Osorio

If *Badge of Honor* dwells about interiority, and even claustrophobic settings, then *Lonely Soul* (2008) is about a transient urban structure. According to Osorio, the assembly was inspired after observing an Afro-Caribbean woman selling *piraguas* (ice cream cones) on a hot summer day in North Philadelphia.[13] The subject is human displacement, a notion translated into dislocating elements and objects whose functions appear altered or removed. While the pushcart may evoke the iconic image of the *casita*, or children's house, its tilted position conveys a sense of instability as if it were floating in the waters of the Caribbean. The underarm crutches, instead of helping injured or handicapped people, have become the columns that support a free-standing – though skewed – domestic construction. In what may be interpreted as a subtle homage, the Duchampean bicycle wheel does not appear to turn; instead, it has become a dysfunctional and ornamental element.

These passages of installation art, particularly those associated with the tactics of the tableau, could pose a meaningful influence to the current developments in interior architecture and adaptive reuse.[14] Both Kienholz's and Osorio's works demonstrate that the formation of interior space is not necessarily – or exclusive – the gestation of new forms, but that it can also contemplate a range of mimetic tactics such as the displacement, rotation, fragmentation, or dislocation of ordinary objects and elements. It is clear that the listed "interiorizing" tactics are typically developed in a similar terrain as that of interior architecture, where spaces are usually discernible by determined boundaries and meaning is affected by the placement of architectural elements and everyday objects. Conceiving space through scenographic means obliges the viewer to think of *interiority* as the site of reassembling, whereby the open quality of displacement takes the place of unity.

Edward Kienholz once said, "the self-concept of our society can be inferred from its garbage," a provocative thought that may also be

interpreted as a reconsideration of the notion of junk, or the range of disposable elements and objects created by our culture.[15] Kienholz's idea suggests a clear affinity with Robert Venturi's reassessment of the notion of convention:

> An architect should use convention and make it vivid. I mean he should use convention unconventionally… . I do not refer to the sophisticated products of industrial design, which are usually beautiful, but to the vast accumulation of standard, anonymously designed products connected with architecture and construction, and also to commercial display elements which are positively banal or vulgar in themselves and are seldom associated with architecture.[16]

What Venturi suggests is essentially what Kienholz and Osorio demonstrate in their work: a full reconsideration of the value of ordinary, disposable, and conventional objects. This position, it could be argued, also conveys the implications of unsustainability. We know the world is saturated with objects; most of them are likely to end up in landfills. Rather than dismissing (throwing away) those things, the challenge is how to discover alternate and poetic meanings in them. Interior architecture, like installation art, offers a spatial platform for the assemblage of elements: walls, ceilings, doors, windows, and furniture.[17] Installation art demonstrates how the significance of those elements may be altered or modified depending on their placement in relation to the space and to other objects; rather than imposing the necessity of designing new elements, interior architecture and adaptive reuse may also consider strategies of redefining existing elements, assuming tactics such as collage, displacement, fragmentation, or ready-made. Thinking of creative means for reusing and recycling existing objects, elements, and buildings could lead to a reconsideration of interior environments in a more sustainable, suggestive, and poetic manner.[18]

Notes

1 Anthony Vidler, *Histories of the Immediate Present: Inventing Architectural Modernism, 1930–1975* (Cambridge, MA: MIT Press, 2008), p. 178.

2 Ibid., p. 179.

3 Theo Van Doesburg, "Towards a Plastic Architecture" (1924), in *Programs and Manifestoes on 20th-Century Architecture*, ed. Ulrich Conrad (Cambridge, MA: MIT Press, 1970), p. 79.

4 Anecdote quoted in various texts, among them Calvin Tomkins, *Duchamp: A Biography* (New York: H. Holt, 1996), p. 137.

5 There is an extensive list of collaborations between artists and architects through the 20th century, certainly starting with the Bauhaus, where Gropius included this idea as one of the school's main goals. Some of the most well-known pairs of artist-architect collaborations are Amédée Ozenfant and Fernand Léger, Antoni Gaudí, Salvador Dali, Alfonso Iannelli, and Frank Lloyd Wright; and more recently Frank Gehry and Claes Oldenburg.

6 For a description of the concept of the "assisted readymade," see Dalia Judovitz, *Unpacking Duchamp: Art in Transit* (Berkeley, Los Angeles, London: University of California Press, 1998), p. 137.

7 Quoted in Anne D'Harnoncourt and Kynaston McShine, eds., *Marcel Duchamp* (New York: Museum of Modern Art, 1973), p. 295.

8 In his biography, Tomkins develops an extensive review of the passionate relationship between Duchamp and the Brazilian sculptor Maria Martins. See Tomkins, *Duchamp*, pp. 353–357.

9 Tomkins reports that Duchamp brought it from the region of Cadaqués, Catalunya. Tomkins, *Duchamp*, p. 431.

10 In her review about "The State Hospital," art critic Shelly Couvrette comments about Kienholz's experience working in a psychiatric ward in 1947. See www.cat-sidh.net/Writing/Kienholz.html (accessed 22 February 2015).

11 In a letter to *Artforum*, Kienholz describes his ideas for this work. See *Artforum* #7 (Summer 1969): pp. 4–5.

12 González establishes a correspondence between Joseph Beuys's "social sculpture" and Osorio's "social architecture," see Jennifer A. González, *Pepón Osorio* (Los Angeles, CA: UCLA Chicano Studies Research Center, 2013), p. xi.

13 Commented in González, *Pepón Osorio*, p. xi.

14 The term “passages” refers to the seminal text by Rosalind Krauss, *Passages in Modern Sculpture* (New York: Viking, 1977).

15 Quoted in Michael Schulze, “The Forming Process of Assemblages and Objects”, *Leonardo* 23, no. 4 (1990): 373.

16 Robert Venturi, *Complexity and Contradiction in Architecture* (New York: Museum of Modern Art, 1977; Orig. ed. 1966), p. 42.

17 Probably the most remarkable architectural examples that explore the notion of assemblage of ordinary elements and objects are the “social explorations” of Samuel Mockbee and the Rural Studio in Hale County, Alabama, and Teddy Cruz’s collage-like constructions in the Tijuana-San Diego region.

18 Ellen Dunham-Jones, for example, discusses the opportunities offered by building and site retrofitting in suburbia. See Ellen Dunham-Jones and June Williamson, *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs* (Hoboken, NJ: John Wiley & Sons, 2009).

Chapter 15

Inside the prefab house

Deborah Schneiderman

The investigation into modern prefabrication has enjoyed much attention in the architecture community for over a century, but until very recently, the literature documenting its significance has contained a notable omission. The techniques and applications of prefabrication of the interior have been evident for thousands of years. Prefabrication in the built environment owes much of its advancement to concepts investigated in terms of interior architectural elements and components, and thus it deserves closer examination. The evolution of the prefab house decidedly includes the development of ideas and integration of prefabricated interior components. The notion of prefabrication, and particularly the prefabricated dwelling, receives continued attention by architects and designers for reasons of efficiency and affordability of construction coupled with a current shift toward, or return to, sustainable technologies, designs, and environments.[1]

Historically, prefabricated interior elements and constructions have been integral to the development of the prefabricated house. Introduced in 1833 in England, the Manning Portable Colonial Cottage is the first documented prefabricated house. It was transported to Australia for the construction of new settlements.[2] Houses like this considered the building

envelope – though the advent of interior prefabricated elements within the prefabricated house would soon follow. Innovations in the prefabricated interior of the prefab house ranged from individual elements to complete assemblages. In the early part of the twentieth century, the Sears, Roebuck and Company kit houses introduced an early prefab innovation: interior lining that was essentially an early form of gypsum, which reduced construction time of the kit-based house. Although an optional choice for the home buyer, this innovative material could replace internal partitions made of traditional lath and plaster.[3] Even Frank Lloyd Wright turned to prefabrication; he installed a prefabricated frieze in his own home and studio in Oak Park, Illinois. An early example of a complete interior prefabricated assemblage is R. Buckminster Fuller's Dymaxion Bathroom (1936). The bathroom was designed in four basic sections, each of which was stamped out of sheet metal. Extremely efficient in its design, this bathroom included a tub/shower module and a lavatory/toilet module – all contained within five square feet of floor space and weighing only about as much as a conventional bathtub.[4] This bathroom represents a forerunner that influentially fueled the subsequent specialty prefabrication market. It serves as a precursor to the pod bathrooms currently being designed and installed in buildings today.[5]

There are many examples of innovative, singular prefabricated elements within interior environments. This investigation looks at three typologies where the interior environment is truly integrated in the conceptualization of the prefabricated house and the significance of that integration. These houses are uniquely representative of an interior architectonic that is integral to the design of the prefabricated structure as a whole. The Lustron House, a mass-produced prefab introduced by Carl Strundtland in 1946,[6] integrates a conceptual link between the house's structure, interior, and exterior as expressed through material and finish.[7] The Furniture House series, an ongoing prefabrication investigation, elevates individual and commonplace interior element of storage furniture to multifunctional elements of structure, interior, and exterior.[8] The Composite House, an unbuilt project house, conceptualizes assemblages as structural

elements, which are at once interior and exterior elements.[9] These three houses share the notion that prefabrication was as critical to the interior as it was to the exterior.

Lustron House: a closed-system prefabricated home

The interior elements of the Lustron House were developed as a system of prefabricated modular units that not only act as dividing or space-making elements, but also function as programmed space, shelving, cabinetry, closets, and vanities.[10] In an article about the Lustron House, Wolfe and Garfield note, "Twenty percent of the wall space was devoted to such built-in cabinets, dressers, and closets, manufactured as complete units and plugged into the house at the building site."[11] As such, this modularization of the prefabricated parts brings a furnishing element to the level of programmed prefabricated space. Though the panelized interior assemblages did not function as structural elements themselves, later unbuilt iterations of the project utilized the untapped strength of the steel panels as structural elements.[12]

The Lustron House was certainly not the first example of a prefabricated steel home, but it was the first to embrace the materiality of prefabrication. In some of the early prefab homes around the time of the Great Depression (e.g., the Armco-Ferro House in Cleveland), the exteriors consisted of prefabricated steel systems. However, the interiors were not prefabricated and called for traditional plaster walls that required standard on-site construction.[13] The prefabricated Motohome (1933) was built with steel exterior panels and boasted a modern exterior façade. The interior of this house incorporated elements of prefabrication – a highly touted kitchen element and a novel built-in cigarette lighter. Interior surfaces demonstrated innovation, yet featured finishes reminiscent of familiar interior materials, such as plaster and hardwood.[14] The interior of the Lustron House was a rather radical departure from its site-built counterpart. The interior wall

panels and built-in furniture were manufactured from the same porcelain-enameled steel panels that covered the exterior and roof, establishing a clear visual interior-to-exterior connection. The materials were experienced in their true form, and unlike the Motohome and other prefab houses of this era, there was no attempt to hide the metal used as the interior wall and cabinet finish.[15] The homeowners, in many cases, embraced this unique metal finish, utilizing magnets throughout the interior.[16]

The interior of the standard model consisted of eight prefabricated cabinets and closets in addition to the plain interior wall panels.[17] All wall panels in the original design were non-structural and erected over a structural steel framing system.[18] The Lustron House was packaged with several prefabricated space-making elements, including a bedroom vanity wall unit that eliminated the need to buy a clothes dresser, and a built-in china cabinet that formed the wall assemblage between the dinette and the kitchen (Figure 15.1). As such, the interior elements defined space and provided the living program.

The house also included mechanical innovations to make the lives of the homeowners easier, such as a built-in kitchen exhaust and an undercounter all-in-one dishwasher/clothes washer (although apparently neither functioned especially well).[19] The interior and exterior of the house were designed and manufactured within a "closed system."[20] The elements and components of the structural system, including everything from windows to bathtubs, were designed specifically for the house. In what would ultimately amount to a serious limitation, structural elements meant for other homes could not be used for the Lustron House, nor could elements of the Lustron House be used in other homes. The Lustron factory even had a machine whose sole function was to produce a bathtub at a fraction of the cost of the traditional tub; unfortunately, the Lustron tub was designed on the dimension of 5 feet 1.5 inches as opposed to the standard 5-foot tub. In order for the manufacturing to be cost effective, they would have to produce twice as many tubs as the Lustron houses needed, which was impossible as

this idiosyncratic dimension did not meet the dimensions of the typical tub.[21]

The design of the Lustron House proved to be manifestly innovative in its expression of interior prefabricated elements. Though it exhibited a visual connection between the design of the interior and the exterior, a true integration would have been in a structural connection between these prefabricated interior elements and the core construction of the house. This lack of appropriate engineering may have been one of the downfalls of the Lustron House. Highly redundant in nature, the separate framing and panel systems did not otherwise take advantage of the structural capabilities of the steel. The framing system, in fact, was determined by Koch to be unnecessary. In his 1950 redesign of the house, he developed an integrated panel that acted simultaneously a structure, and interior and exterior surface.[22] The Lustron Company folded in 1950, and Koch's ideas never actualized beyond the drawing board.[23] Although the goal of true mass production was not achieved, the integration and significant placement of the prefabricated components informed the evolution of the prefabricated interior.

Figure 15.1 Lustron House, 104 State Park Road, Beverly Shores, Porter County, IN. Prefabricated porcelain-enameled steel built-in china cabinet/wall assemblage.

Image credit: public domain

Furniture House: an interiorized system for custom house prefabrication

Shigeru Ban's Furniture House relied on the prefabrication of what is typically considered an object of interior design: furniture. Furniture House elevated the status of furniture from an object added to a room to a space-defining and structural element. Furniture House 1 was completed in 1995 and five houses of this typology have been completed to date.[24] Ban's development of furniture as a means for structure formed a natural progression in his investigations into unique forms of structure. An earlier project premiered the repetition of recycled paper tubes.[25] Ban's exploration of alternative construction methods remains ongoing; he applied his learned

lessons to the use of prefabricated concrete piles for structure in the PC Pile House.[26] After these houses, Ban continued with a succession of case-study houses that allowed him to further test alternative structures. In the design of Furniture House, Ban coupled his structural investigations with the tragedies of Japan's earthquakes – where falling furniture caused many casualties. The idea for the first Furniture House was conceptualized when Ban designed the "Library of a Poet," in which he utilized a paper tube truss construction coupled with floor-to-ceiling bookcases. From the design and construction of the library project, Ban realized the possibility that furniture could be designed to serve as the primary structure.[27]

For the fabrication of the first Furniture House, Ban collaborated with a furniture manufacturer. The component elements were completely manufactured and finished, inside and out, off-site. In many instances, the furniture elements function simultaneously as interior, exterior, and structure, containing insulating materials and having both interior and exterior finishes as necessary. The construction of Furniture House reconceptualized the traditional hierarchy of building. In this design, the hierarchy is eliminated and "furniture and house are one."[28]

Fundamentally, the Furniture House is designed as a conceptual, realized system for the construction of a house. It follows a wood frame, two-by-two typology, but contains enhanced strength. The construction of the home is based on the module of the furniture elements. The dimensions of the units used in this house are 240 centimeters high, 90 meters wide, with a depth of 45 centimeters for bookcases and 70 centimeters for other units. Each unit weighs approximately 80 kilograms so that a single person can move it.[29] Several types of furniture modules can be programmed into the houses. There are many benefits to this construction typology; reduced site construction time, reduced leftover materials that require removal from the site, and a reduced amount of labor to build the house. Off-site production was specifically chosen because building the structural furniture in a controlled environment permits a higher level of craft and efficiency.[30]

Ban has proceeded to design and build several iterations of Furniture House. Notably, Furniture House 2 was designed as a prototype for

a two-story house. The structural furniture on the first floor carries the load of the second floor, and second floor furniture elements carry the roof load (Figure 15.2).[31]

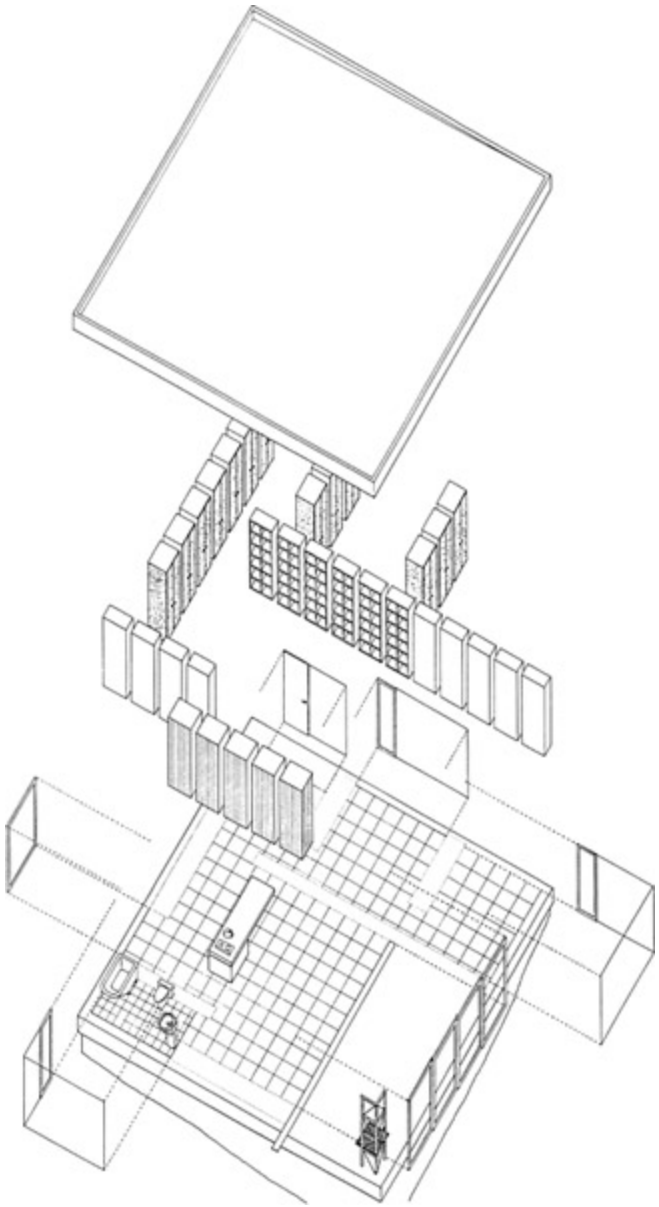

Figure 15.2 Furniture House 2 exploded axonometric depicting structural furniture elements; Shigeru Ban Architects

Composite House: a non-hierarchical unit-based building system

The Composite House, designed by Ferda Kolatan and Erich Schoenenberger of su11 architecture+design, comprises an inherently flexible prefabricated housing system.[32] Given that its organization and the parts are integral and connected, this design ethos is equally employed in both the interior architecture of the house and the exterior. The house is a prototype, unbuilt concept that is truly a culmination of this investigation. Add-ons, the architects' name for the prefabricated multi-programmed units, are "components designed in response to specific programmatic and atmospheric needs."[33] Add-ons carry the capacity to have walls, stairways, doors, or storage attached to them.

The minimization of the importance of the house's shell is of particular interest in the Composite Housing project. The system is one that is inherently fluid and quite unlike the largely fixed systems of typical construction – or even most prefabs. The architects, in a sense, divorce themselves from the role of designing the building or shell and allow the resultant exterior to be derived based on chosen, mostly interior, program. A local contractor would build the house skeleton (as it is termed by the architects) from wood or steel. Each homeowner, through the selection and combination of their preferred add-ons, would then personally design the house. The interior and exterior architecture are combined into units by the homeowner to meet their particular programmatic needs. There is a dimensional system to enable design customization and configuration for kitchens and bathrooms through a modular unit: one unit for a toilet, two for a sink cabinet, three for a shower, and four for a bathtub. The elements are intended for manufacture with an epoxy finish, one that would wear equally well and meet the needs of both the interior and exterior environment, balancing them hierarchically. The designers further connect the interior architecture with that of the exterior through the composite system which emphasizes the importance of interior habitation in the design of the add-ons. "Surface and texture are integral to the design,

acknowledging the emotional connection people have with materials."[34] The house celebrates everyday elements that are functionally critical to the interior of the home like stairs, cabinets, and storage spaces. Rather than a predetermined take on how individuals will live within the house, the add-ons encourage the homeowner to consider the livability possibilities of the interior of the home and select and arrange the units accordingly.

The add-ons are designed to be interchangeable, providing the ability to reconfigure elements over time as necessary and/or desired. The architects consider the units as a habitable puzzle consisting of several functions, including object, furniture, and space (Figure 15.3).[35] Color choices, typically considered a decorative finish, are integral to this project, applied largely as coding devices that define the planes and use of the elements.

This system has been reconceived several times. In addition, the architects have designed a second system called Composite Architecture, which combines furniture and architecture systems into inter-programmed space comprised of sofa and bed units, table and storage units, and other components. These elements are purely interior prefabricated assemblages and exist without connection to an architecture. The elements do not need to be used within a specific structure and could be plugged into existing space to create true interior prefabrication. The system, like the Composite House, is customizable; the homeowner selects and previews the functionality, materials, and colors through an online interface.

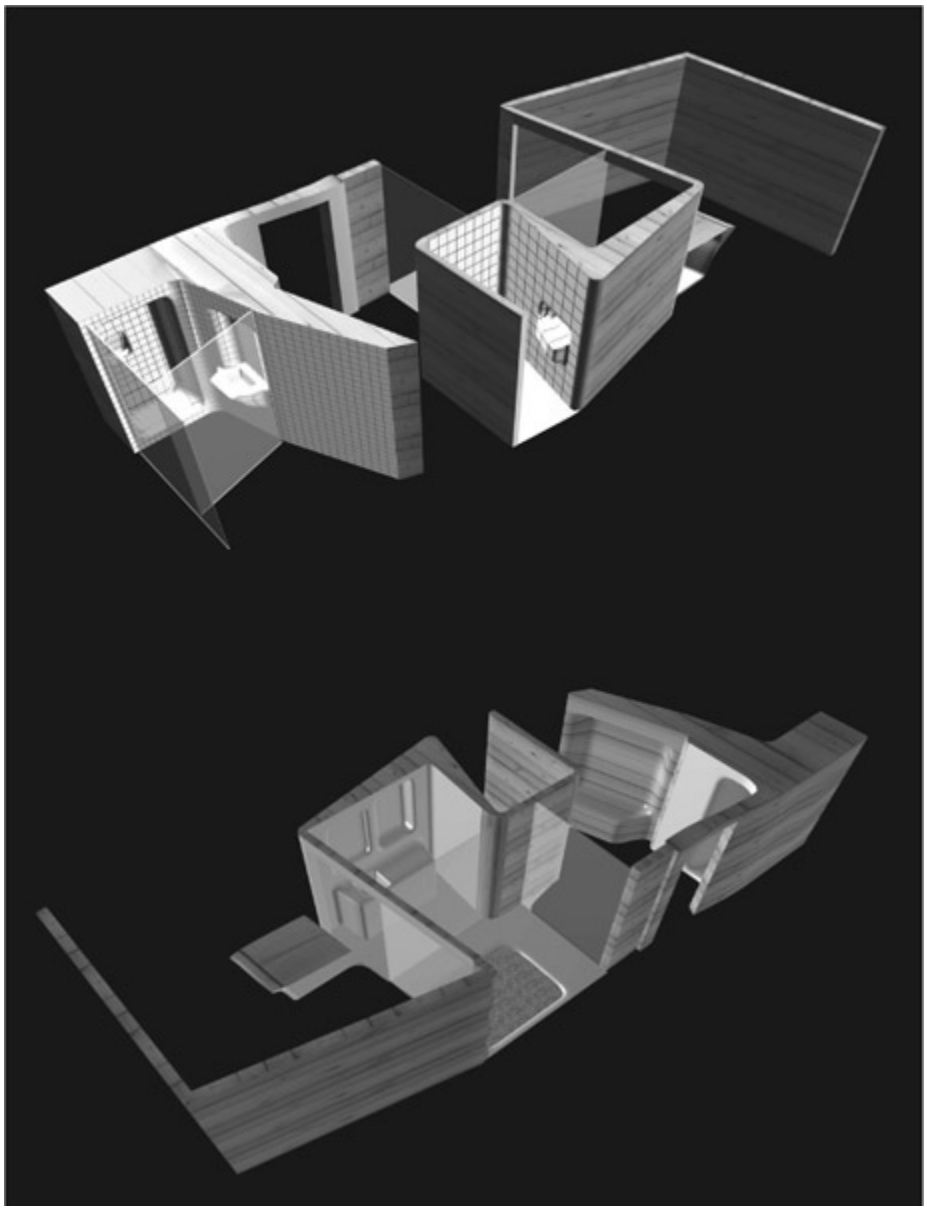

Figure 15.3 Sample Composite House add-on units, su11 architecture+design

Upon close investigation, each of the houses secures a place of prominence for interior elements within the prefabricated home. All three houses exhibit a strong connection between interior and exterior and represent an evolution of the integration of prefabricated interior components within the prefabricated house. All three houses consider the notion of the prefabricated assemblage by means of programmed interior elements and space-making devices. The projects are uniquely

interconnected through unified interior-exterior materials, while interior elements are elevated for programmatic necessity rather than decoration. In the latter two projects, the Furniture Houses and Composite Houses, interior elements have a further architectonic role as they are functionally the structure in addition to programmed interior space.

Though the Lustron House did not actually elevate the interior built-ins or assemblages to the level of structure, the connection of interior, exterior, and structure was implied through materiality and the space-making nature of the built-in units. The Koch redesign of the structure did begin to explore the structural nature of the panels, which could be considered a precursor to a structural interior assemblage.[36] The Furniture House, in particular, questions the traditional hierarchy of design elements, elevating furniture to be the structural element without which the house would not exist.[37] The Composite House, a prototype concept, is truly a culmination of this investigation. Each contain composite elements of interior, furniture, structure, and exterior.[38] The traditional design hierarchies have been eliminated, and the resultant form exists as an equalization of all elements.

An overarching result of the use of prefabricated elements is of particular interest in today's receptive climate toward sustainability. For example, building off-site has demonstrated reduced material waste and labor costs, while the fabrication of modular, transportable, or interchangeable elements allows for adaptability and reuse, increasing the life of all the elements.[39] Further investigations into prefabrication of such interior elements by interior architects in a purposefully sustainable manner will continue to advance the significant territory of prefabricated interior architecture.

Notes

1 Deborah Schneiderman, *Inside Prefab: The Ready-Made Interior* (New York: Princeton Architectural Press, 2012), pp. 8–11.

2 Colin Davies, *The Prefabricated Home* (London: Reaktion Books, 2005), pp. 47–48.

3 Katherine H. Stevenson and H. Ward Jandl, *Houses by Mail: A Guide to Houses From Sears, Roebuck and Company* (Washington, DC: Preservation Press, 1986), pp. 29–30.

4 Alden Hatch, *Buckminster Fuller: At Home in the Universe* (New York: Crown Publishers, 1974), pp. 146–147.

5 Davies, *The Prefabricated Home*, pp. 25–26.

6 Douglas Knerr, *Suburban Steel: The Magnificent Failure of the Lustron Corporation, 1945–1951* (Columbus: Ohio State University Press, 2004), pp. 78–79.

7 Thomas T. Fetters, *The Lustron Home: The History of a Postwar Prefabricated Housing Experiment* (Jefferson, NC and London: McFarland, 2002), pp. 18–30.

8 Matilda McQuaid, *Shigeru Ban* (London: Phaidon, 2003), pp. 166–169.

9 Jill Herbers, *Prefab Modern* (New York: Harper Design International, 2004), pp. 130–131.

10 Barry Bergdoll, Peter Christensen, Ron Broadhurst, and Museum of Modern Art, *Home Delivery: Fabricating the Modern Dwelling* (New York: Museum of Modern Art, 2008), pp. 102–104.

11 Tom Wolfe and Garfield Leonard, "'A New Standard for Living': The Lustron House, 1946–1950", *Perspectives in Vernacular Architecture* 3 (1989): 51–61.

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Chapter 16

Oceanic interiorities

Sarah Treadwell

Stepping precariously into the sea, across a littoral of dried weed, sharp shells, and plastic, is a moment of slight anxiety and clenched muscles. The water rises up the body as the beach slopes down; lifted, immersed, and changed in temperature, the body is held by surrounding water. To float, buoyed up by contouring liquid of a silky kind, the sky dazzling, inspected by cruising seagulls, requires trust and relaxation undermined by recurrent images of the unknown in deep water.

To push into the depths accelerating away from sweet air into a greenish, blurred world with limited horizons, briefly sea creature, cetaceous and skillful, is some sort of amniotic return, and an acknowledgement of complicity; human bodies mix salt and water. Out of your depth in many senses the sea lifts and submerges; dragging on flesh, it seems reluctant to release you back into everyday life. You carry the sea with you.

To live in the South Pacific is to be conscious of the watery nature of interiority. Epeli Hau'ofa, a Fiji Islander, writer, and anthropologist of Tongan descent writing for Oceanic people, starts his text, *The Ocean in Us*,[1] with words from poet Teresia Teaiwa: "We sweat and cry salt water, so we know that the ocean is really in our blood."[2] On the other side of the world, British historian Philip Hoare, in his book *The Sea Inside*, wrote of his daily immersion in northern oceans and his longing for engagements with the deep waters that maintain the globe.[3] These recurrent references to an interior relationship with the sea suggest a spatiality that this chapter will traverse.

Water covers approximately seventy percent of the earth's surface. The salt-laden oceans constitute the most extensive interiors that we confront, and on which we depend. Because we have the sea within us and because we also fear immersion (in the collective) in death, the sea is envisaged in this chapter as a spatial condition that epitomizes our vacillations between individuality and collectivity. This conflicted relationship is explored through the making of a written image of the space of the sea; an image of oceanic spatiality constructed by following threads of writing that exhibit a sensitivity to the vast interior space that we exploit, pollute, and endlessly imagine as escape.

Speculating on conditions of oceanic space that acknowledge the shared and discrete natures of bodies and objects of the world, the written image addresses the inevitable tension between the spaces of our collective alignment and the temporality of individual lives. Each being in the world – human and nonhuman – tends to be resistant to being taken over. Each body can also be seen as open to combined engagements through the action of work and negotiation.[4] To swim in the sea is to form, momentarily and warily, a collaborative relationship with the medium while still maintaining our breathing selves. To undertake oceanic writing is to recall and enact that collaboration.

Artist Robert Smithson shaped earth and water into a spiral with the understanding that there was a connection between the Red Sea and blood;[5] oceanic writing acknowledges the scalar shifts between human and

marine bodies, both liquid and teeming with life. Such oceanic interiority is maintained by permeable membranes (skin and shore) that permit separation while allowing connections at individual and global scales. These encounters have ethical and formal conditions. The immersive interior is, in one sense, a uterine space; a space of beginning that endlessly repeats the ordinary dramas of life and recognizes an exteriority within that cannot be expelled.

Interior geometries and porous conditions

Epeli Hau'ofa ends his influential essay, "Our Sea of Islands," with the following words addressed to the people of Oceania, cast by the West as isolated inhabitants on small and insignificant islands in a vast sea. Hau'ofa instead understands the inhabitants as part of an expansive liquid terrain, a surface that is traversed with skillful navigation:

> Oceania is vast, Oceania is expanding, Oceania is hospitable and generous, Oceania is humanity rising from the depths of brine and regions of fire deeper still, Oceania is us. We are the sea, we are the ocean, we must wake up to this ancient truth and together use it to overturn all hegemonic views that aim ultimately to confine us again, physically and psychologically, in the tiny spaces that we have resisted accepting as our sole appointed places and from which we have recently liberated ourselves.[6]

Hau'ofa points to a vital enlargement of space – oceanic space as expansive, extending past the terrestrial ground of islands to make connections of all sorts. The skills of navigation were recorded in the sand and in stick charts, precise spatial descriptions of bodies moving under a rotating sky in a wide-horizoned ocean. The stick charts describe geometries of the surface of the sea aligned to time, with marks that record moving islands, rising stars, and planets. Hau'ofa points out that prior to European arrival in the Pacific, "Boundaries were not imaginary lines in the ocean, but rather points of

entry that were constantly negotiated and even contested. The sea was open to anyone who could navigate his way through."[7] The sea is porous, map-like, narrated, and figured.

On the brink (of falling)

Philip Hoare wrote on his daily practice of swimming in *The Sea Inside*:

> That fixity of sea and sky is a supreme deception… . The horizon is only an invention of our eyes and brains as we seek to make sense of that immensity and locate ourselves within it. The sea solicits such illusions. It takes color from the clouds, becomes a sky fallen to earth; it only suggests what it might or might not contain. Little wonder that people once thought that the sun sank into the sea, just as the moon rose out of it.[8]

On the surface, thickened with life, reactive to elsewhere, Hoare sees hints of a condition beneath the skin that is at times a mirror. Invitation and unreliability collect in his descriptions of the surface; meretricious, ornamental, the sky falls. Across the surface that stretches along the curvature of the earth, Hoare slides the horizon, which, while imitating closure, lures mind and body around the globe. Standing on the edge of a northern island, he notes:

> The sea defines us, connects us, and separates us. Most of us experience only its edges, our available wilderness on a crowded island… . Perpetually renewing and destroying, the sea proposes a beginning and an ending, an alternative to our landlocked state, an existence to which we are tethered when we might rather be set free.[9]

Hoare reflects on oceanic, tidal oscillations that make and remove; his sea provides an image of the fluctuations of life: sailors might drown, but Aphrodite was born of sea foam, the floating sperm of Uranus, according to

Hesiod.[10] For Hoare, the sea is shaped as a sharp-edged image of freedom opening into the world.

Teresia K. Teaiwa, in an essay on native Pacific cultural studies, "Lo(o)sing the Edge," also tests the limits of oceanic edges. She writes of the edge of the ocean as a place to stand, a point to look out and back from and as a critical or cutting edge. She asks:

> Is the edge always held at the edges of the Pacific? Is it possible to have an edge on the world's largest ocean? Epeli Hau'ofa says that 'our edge is the ocean' (Waddell, Naidu, and Hau'ofa 1993). No other people have had their history shaped so much by an ocean. The islands of Kiribati and Tuvalu may not exist in thirty years' time. 'The ocean has the edge.'[11]

The ocean in Teaiwa's image is not only the recipient of history, but also its instigator and participant. Temperatures of the world have been raised, but it is the ocean itself that will pour across the reefs and beaches of Pacific islands, removing traces of past and present occupation. The ocean will change the histories of Pacific people; it is not possible, Teaiwa suggests, for people to have an edge on the Pacific. Herman Melville in *Moby Dick, or: the White Whale* gave that ocean a heartbeat and divinity. "Thus this mysterious, divine Pacific zones the world's bulk about; makes all coasts one bay to it; seems the tide-beating heart of earth."[12]

Dreaming escape

From the edge, an opening into the surface conditions of the sea prevails; we look out to a pulsing liquid skin that surrounds us. To fall into water is the stuff of fantasies and nightmares; sailors, those who navigate instrumentally, fear death by drowning while things beneath the surface disappear from consciousness, surfacing only as fleeting anxieties and desires. Attentive, no doubt, to the lines of reflection and dispersal that pattern and ornament the

sea. As a constrained child, John Ruskin, author of *The Seven Lamps of Architecture* (1849), gazed out from the edge.

Rosalind Krauss has told the story of Ruskin as a child watching the sea. Her reportage evokes his restricted and constrained childhood that left him with the gift of observation. Ruskin says:

> But before everything, at this time, came my pleasure in merely watching the sea. I was not allowed to row, far less to sail, nor to walk near the harbor alone; so that I learned nothing of shipping or anything else worth learning, but spent four or five hours every day in simply staring or wondering at the sea.[13]

The small, immobilized boy is aligned with the beat of the sea received only in his stillness, immobility undone imperceptibly by the waves, like the tides. The blood in his system barely circulates with the slow rhythm of passing time. An image of elsewhere, a removal from the social, the sea is pictured as "opening into a visual plenitude that is somehow heightened and pure, both a limitless expanse and a sameness, flattening it into nothing, into the no-space of sensory deprivation."[14] Krauss's words, like the waves under observation, construct the sea as a neutral space for wondering. The detached plane of the surface offers some sort of compensation for enforced restraint.

Beat of blood and guilt

The contemplation of the sea, childhood troughs and peaks of desire, inscribed in a wash of salty liquid, would in Ruskin's adulthood turn vividly to color in response to Joseph Mallard William Turner's painting, "Slave Ship."[15] Ruskin wrote:

> Purple and blue, the lurid shadows of the hollow breakers are cast upon the mist of the night, which gathers cold and low, advancing like the shadow of death upon the guilty ship as it labors amidst

> the lightning of the sea, its thin masts written upon the sky in lines of blood … and cast far along the desolate heave of the sepulchral waves, incarnadines the multitudinous sea.[16]

Waves with no substance merge with the miasma of the scene. Stained and flaming, the sea carries the guilt of the slave ship, tinted with the blood of those cast into the water; waves as a funeral procession, marking passing lives, approaching death. The sea is described by Ruskin with reference to the guilt of Macbeth:

> Will all great Neptune's ocean wash this blood
>
> Clean from my hand? No; this my hand will rather The multitudinous seas in incarnadine, Making the green one red.[17]

Spreading guilt has replaced water's virtues of cleansing and purifying. Marcus Wood, writing on the visual representation of slavery and Turner's painting of a slave ship, noted that the "The potency of the red blood reasserts itself … to dye the entire sea."[18] More than was measured in the *King James Bible* in Revelation 8:8, where, when the "second angel sounded, and as it were a great mountain burning with fire was cast into the sea: and the third part of the sea became blood."[19]

Shot through with redness, partially or wholly bloody, oceans are colored by disaster or domestic dereliction (abattoirs regularly flow into the sea). Even as the sea, becoming blood, is oxygenated with an infusion of red cells, the "second angel emptied his bowl into the sea, which turned into a fluid like the blood of a corpse, and every living thing in it died."[20] The sea is understood as a container of all the detritus and rejected things of the world.

Tears overflow

Spatially imagined as a bleeding container of fear and trash, or a still surface mirrored and riven by geometry, or shaped as a mechanism for abstract

detachment, the sea is also remembered as an implacable leveler. In the early twenty-first century, a number of severe tsunamis hit Aceh, Japan,[21] Samoa[22] and other countries on ocean edges. The seas spread, dissolving and eliminating many thousands of objects: people, animals, insects, houses, furniture, and plants. Film clips from the time are haunting as the insignificance of individual objects is set beside an immense body of moving water in a washing away that rendered all equivalent; a scouring that left the earth of Aceh exposed. Statistics gathered from writing and reports on the tsunami noted:

> Age and sex were described as risk factors for death … significantly higher death rates were reported among females… . Significantly elevated risk of death was also observed in children … and older adults … Other risk factors included education which was inversely associated with mortality risk; fisheries-based livelihoods, indoor location at the time of the tsunami, and home destruction and the physical environment. The majority of tsunami deaths were due to drowning.[23]

Statistics cannot remain dry in such circumstances. With the many deaths, the sea was both the instigator and repository of loss and mourning; lost love, becoming child in loss, the ocean filled with catastrophic tears. Hélène Cixous, in "Déluge," wrote a final oceanic image of lost love and mourning:

> I went right to the end of the labyrinth, under the roar of the tidal wave, I ran beneath the sea, I ran on the earth, I went right to the end of misfortune, above the racing tide rattled to the wind, below I forced my way, I went right to the limit which I pushed back, alive I abruptly entered behind the time after hope, as long as we advance we prevent the story from ending, I ran, everlasting the love – mourning in me the child-suffering created a flow of tears matching the tidal wave above, bearing love death life further, no I

> would not let myself be comforted and dried out, I would run on until dream or reality gave me back my love, to the end, I run.[24]

The space of mourning is filled with the resistance of the running figure, unable to outstrip the water, in a space of dreaming where the child cannot be reached in time, always out of reach, where loss of love and life is imagined over and over again. The tidal reach of such images is found in the heaviness of slow-moving water, in a deep oceanic space, which bears both the negligence and the beauty of the world.

Every domestic interior is, in some senses, oceanic, being liquid (steam, moisture, and liquid emissions are constantly resisted) and permeable (cut through with doors and windows and sound); they are structured with geometries and surfaces that record the lives that they contain. Able to be tainted or sweetened, and subject to evaporation, oceanic interiors can be navigated with skill. At times resistant to collaborative ventures, they contain new life, failed marriages, and difficult childhoods. Despite being beset by a rising excess of material consumption, flooded with items that exist to maintain other systems and other desires, the domestic interior is oceanic in the tears that flow: sweat forms, blood falls, and waters break over the difficulties and pleasure of everyday life.

Marine references have fabricated an image of oceanic interiority as an empathetic practice, and oceanic spatiality emerges through a deployment of thick, oily lines of things and words; the extracted interior space being poised between the poetic and the accurate.[25] To write is always to construct an interior, through familiarity and estrangement, and to write a pattern of oceanic interiority has been both an act of mourning and a collaborative, formal undertaking. Containing anxieties, rising waters, and detritus, reflecting desire and the passage of time, the sea repeats the interior passage of life born and ended.

Notes

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3 Philip Hoare, *The Sea Inside* (London: Fourth Estate, 2013).

4 Adam S. Miller, *Speculative Grace: Bruno Latour and Object Oriented Theology* (New York: Fordham University Press, 2013).

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6 Epeli Hau'ofa, "Our Sea of Islands", in *Inside Out: Literature, Cultural Politics, and Identity in the New Pacific*, ed. Vilsoni Hereniko and Rob Wilson (Boulder, CO: Rowman and Littlefield, 1999), p. 37.

7 Epeli Hau'ofa, "Our Sea of Islands", in *A New Oceania: Rediscovering Our Sea of Islands*, ed. Eric Waddell, Vijay Naidu, and Epeli Hau'ofa (Suva, Fiji: The University of the South Pacific School of Social and Economic Development, in Association with Beake House, 1993), p. 9.

8 Hoare, *The Sea Inside*, p. 17.

9 Hoare, *The Sea Inside*, p. 7.

10 Hesiod, Theogony, (8th–7th century BC), line 195, www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0130%3Acard%3D173 (accessed 19 May 2015).

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15 Joseph Mallard William Turner, *The Slave Ship, 35¾" x 48¼", Oil on Canvas* (Boston, MA: Museum of Fine Arts Boston, 1840).

16 John Ruskin, *Modern Painters*, Vol. 1 (Gutenberg Ebook, 4 September 2009), www.gutenberg.org/files/29907/29907-h/29907-h.htm#b2s5c3p32 (accessed 15 May 2015).

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18 Marcus Wood, *Blind Memory: Visual Representations of Slavery in England and America, 1780–1865* (Manchester: Manchester University Press, 2000), p. 66.

19 *The Book of Revelations: A New Translation of the Apocalypse*, trans. John Bertram Phillips (London: Geoffrey Bles, 1957), p. 36.

20 Ibid., p. 36.

21 Becky Oskin, "Japan Earthquake & Tsunami of 2011: Facts and Information", p. 22 August 2013 06:02pm ET, www.livescience.com/39110-japan-2011-earthquake-tsunami-facts.html (accessed 15 May 2015). "In Japan, residents are still recovering from the disaster. Radioactive water was recently discovered leaking from the *Fukushima Daiichi Nuclear Power Plant*, which suffered a level 7 nuclear meltdown after the tsunami. Japan relies on nuclear power, and many of the country's nuclear reactors remain closed because of stricter seismic safety standards since the earthquake. Two years after the quake, about 300,000 people who lost their homes were still living in temporary housing, the Japanese government said."

22 Toni O'Loughlin and Adam Gabbatt, "Samoa Tsunami: At Least 100 Feared Dead on Pacific Islands", *The Guardian*, 30 September 2009, www.theguardian.com/world/2009/sep/30/samoa-tsunami (accessed 15 May 2015).

> At least 100 people are believed to have died and many more been injured in the Pacific island nations of Samoa, Western Samoa and *Tonga* after the powerful undersea earthquake this week that led to tsunami waves up to six metres high.
>
> Officials in *Samoa*, the worst-hit location, said 63 people were known to have been killed as the fast-churning waters flattened buildings and swept people and cars out to sea, although this figure was expected to rise significantly with many more remote locations still being searched.

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Chapter 17

Technologies

The spatial agency of digital praxis

Erin Carraher

> *The past forty years of progressive architectural design and discourse have emphasized autonomous form on the one hand and programmatic determination on the other, while lacking a similarly rich exploration of the space and spatial complexity in which either occurs.*
>
> — Hight, Hensel, and Menges, 2009

Digital technology has become an integral part of architectural and interior architectural practice. Computational design has freed designers from the convenience of the right angle and the economy of the straight line. It has emboldened them to incorporate robust formal strategies with unexpected vistas and sensual curves. Digital fabrication, in turn, has informed new construction techniques. Seminal works demonstrating the formal and performative potential of these technologies include Frank Gehry's Guggenheim Museum at Bilbao built in 1997, SHoP's Dunescape installation for the PS1 courtyard of 2000, and the Yokohama Port Terminal by Foreign

Office Architects completed in 2002. In recent years, computational design has expanding its boundaries in sensuously pixilated and algorithmically generated interior installations, like The Situation Room installation at the Storefront for Art and Architecture by Marc Fornes of THEVERYMANY. Prototype structures such as those by Achim Menges at the Institute of Computational Design use climate-responsive characteristics of natural materials to create low-tech interactive environments. The work of Gramazio Kohler Architects on robotic assembly processes has led to demonstrations of CNC construction, like their Flight Assembled Architecture exhibit at the FRAC Centre Orléans.

Much has been said about the successes and failures of trends ushered in by this work. Of particular critique are the excesses of formal expression, inefficient material utilization, and proliferation of projects deployed in developing countries that privilege economic and technological advancement over local concerns. This chapter contributes to the critical debate surrounding interior installations by thinking through the spatial agency of computationally designed and digitally fabricated environments. It considers the potential for such technology-based designs to not only allow for new expressive formal orders, but to also empower people to consider socially, culturally, and economically activated space.

The French philosopher Henri Lefebvre reminded us that physical space is both an a priori phenomenon and an a posteriori social construct. Life and thought need space in which to take place. These acts do not occur separate from space, but within it, immediately transforming it forever. Existence is spatial and space is historical, and thus existence must be understood as such. This insight invites us to situate human agency as well as the agency of things, ideas, time, and technology within the discussion of contemporary computational practices. By recognizing the power of spatializing action and examining the agency of space in stimulating and debilitating that action, can designers achieve the goals of not only reproducing society as it is, but also proposing an alternative future? Antoine Picon sets out the need for such action in contemporary practice in the following statement:

> Architecture is always between ideology and utopia. Today we are faced with a renewed question of criticality, because architecture is in a real need to redefine its political agency and to reposition itself … I think that what we're looking for is a new ideology, a new standard regime or belief about architecture's agency in the world at large.[1]

The same can be asked of all disciplines that shape the built environment.[2]

Architectural theorists such as Jeremy Till and Antoine Picon, amongst others, have contributed to the contemporary discourse surrounding agency in design, which is influenced by the Marxist legacy and often carries an implication of affecting change against societal structures. Work of those like Diébédo Francis Kéré, Design Corps, and the Rural Studio focus on improving the social condition of underrepresented populations through design's agency. Not all types of design agency are equal. Digital processes open up an additional avenue for advancing design's technical, political, and social impact by embracing its influence to affect and be affected by the activities that occur within the spaces it creates.

Modernism's spatial legacy[3]

Digital technology possesses an entirely different type of spatial agency as compared to that of the Modernist movement. Twentieth century modernity idealized a type of homogenous space that was a universal space – one of the key paradigms for establishing the desired democratic space.[4] Developing new markets and new clients for their symbolic goods, modern designers conceived housing, furniture, and landscapes for the ubiquitous everyday man (exchangeable with every other man and woman of the same class, and in most cases, the same race). Towns and landscapes, and work and recreational spaces responded to the ethos promoted by mass production and democracy. The austerity of white walls, the elimination of ornament, and rigid formal orders characterized this work, which exemplified a radical shift in both the formal order and social order of

things. In his 1934 "Appraisal of the Development of Modern Architecture," Walter Gropius said:

> The idea of rationalization, which many people aver is the outstanding characteristic of the new architecture, is only its purifying role. The other aspect, the satisfaction of the human soul, is just as important as the material. Both find their counterpart in that unity which is life itself. The liberation of architecture from the mass of ornament, the emphasis on the functions of its structural members, and the quest for concise and economical solutions, only represent the material side of that formalizing process on which the practical value of the new architecture depends. What is far more important than this structural economy and its functional emphasis is the intellectual achievement which has made possible a new spatial vision – for whereas the practical side of building is a matter of construction and materials, the very nature of architecture makes it dependent on the mastery of space.[5]

In a tone that presaged the notion of *interior* architecture, proponents of the Modernist movement, such as Gropius, saw modernity's new "spatial vision" as creating an egalitarian and standardized built environment no longer charged by the historical and ornamental excesses of their predecessors' often anachronistic work. Modernist architects, like those engaged with the International Congress of Modern Architects (CIAM), embraced the logic of industrial production, the rationale of economy, and the movement of capital and labor. Their annual exhibitions and congresses highlighted the virtues of efficient and economic strategies, minimal housing, and an aesthetic cleansed of its historical misdeeds. Public buildings in many places took on the air of simplicity and quietude. The poetry of functionality idealized the disappearance of form through its conversion into a neutral background. Its desire for egalitarianism turned to standardization, and

standardization made architecture disappear by attempting to hide its effects and power.

Contemporary digital practice posits an alternative proposition to modernist practice. Its tools enable it to swap modernist universalism for cultural relativism. If the neutral, multipurpose, flexible box mastered by Mies van der Rohe (and copied by countless lesser architects) was born of technological conditions of mass production, today's computer numerically controlled (CNC) technologies encourage the ideal of mass customization to adapt designs for particular sites, particular programs, and particular clients. It pushes designers toward plurality, diversity, difference, and uniqueness. It encourages designers to value active space, which does not hide itself but proudly displays its dynamism. It draws attention to its conditions of production and impresses its spatial agency on our consciousness. Joan Ockman states that such a shift in formal order expresses a disruption in spatial understanding as well:

> Historically, these opposing tendencies [of duck versus decorated shed or blob versus box] tend to be mobilized in order to either stabilize or to destabilize an existing spatial order. Thus, within the context of the rationalist ethos of modernism, organic or expressionist architecture functioned as an explosive challenge to the norm.[6]

Despite the massive changes in technology and culture since the height of the Modernist movement, our current thinking about contemporary design's agency has not progressed accordingly. The built environment has always had agency, though it has not always been designed to reveal this. Digitally designed and fabricated projects give designers the power to make structures and products that assert their materiality. They make conspicuous how space and matter produce effects on the inhabitants' experience. With this, computational design can help shape a public with the ability to judge a level of responsiveness to its surroundings. It can help that public participate in an intelligent conversation about the impact of space on their actions and

their power to reciprocally impact that space. It can change the public and private discourse on design through a debate on the empowerment of those who engage with a given piece of built work. Modernists may have extended designed space to a segment of Western classes that previously could not afford to have access to it, but in doing so they often created built environments that feigned neutrality, but in fact imposed a heavy-handed formal structure that overwrote the local context. Digitally envisioned and represented design has the potential to create an equilibrium between human and inanimate agents and expand the potential of such work to positively impact a broadened social and economic world.

Even though the digital designer's agency is processed through layers of filters introduced into the process by the use of software programs, coding languages, graphic user interfaces, and tooling, a more direct connection to the production process has been gained, and the end result liberates a new understanding of space. In the case of interior architecture, the limits of economically determined design decisions driven by the cost of nonstandard designs are not historically grounded, but rather, represent the legacy of the previous generation's technological advances in standardized construction techniques. The process of normalizing building components and shifting to products and systems from materials developed at the end of the Industrial Revolution. The potential for contemporary, digitally fueled, customizable interior architectural constructs that are now economically viable to serve an audience beyond the technocratic elite is powerful, once the dialog moves past the process-driven fetishization and formal results of these tools.

Much of the work that has taken place over the past four decades in this rapidly evolving field has involved experiments and installations, but that has not yet been fully realized in programmatic, structural, or environmental autonomy. Digitally produced architecture and interior architecture, which for the purposes of this argument are focused on those projects not integrated with more conventional forms of construction, too often remain in the realm of figurative objects, articulated surfaces, or full-scale prototypes intended to test materials and methods for future

application without engaging with the social and spatial dimensions of how such forms differentiate space. This critique does not discount the critical progress that has taken place to date, but instead aspires for it to do more. The rapid expansion of access to digital tools in low-income areas and developing countries, as well as the open-source nature of the communities working with these tools, allows for the dissemination of knowledge beyond the traditional formal structures of academia and Western practice. This proliferation of access to computational tools promises to expand current structures beyond these myopic issues.

The technology of fabrication

The aesthetic of interior architecture is inextricably linked to the tools used for design. Historically, as stated by William Mitchell, architects "drew what they could build, and built what they could draw."[7] This remains true in contemporary practice. Branko Kolarevic says, "Knowing the production capabilities and availability of particular digitally driven fabrication equipment enables architects to design specifically for the capabilities of those machines."[8] Deep knowledge of the tools is necessary to harness their potential but also is potentially limiting to designers through their predetermined tools and techniques. To break the default response to the given functionality of digital tools and harness their full agency, designers must engage in critical reflection about the formal and spatial results of their built work.

Critical reflection requires time when a new technology is introduced. According to Stan Allen in his article "The Future That Is Now," we are currently in such a phase. Allen outlines three phases of engagement with digital technology starting in the 1990s. He marks this period as the beginning of a series of technological developments whose impact would resonate through the design professions, leading to our current condition. Allen chooses this point of demarcation because of a number of transformational technological advances that happened at the time: the World Wide Web was proposed in 1989 and released to the public in 1992,

the first digital cellular phone call was made in 1990, and the 2G system that would make small, user-friendly electronic devices possible was also developed at that time. In addition, 1990 serves as a marker for the start of several technologically advanced architectural projects. In practice at the time, computer-aided tools were used widely, but there was not an overriding ethos as to how they could be utilized for anything other than digitizing the drafting process.[9]

Early adopters were among the first to explore what these digital tools could do *in the service of* design, not just to aid in facilitating documentation. Computational design in general, and parametric design in particular, facilitates establishing relationships between elements, introducing a fluidity into the design process that was often reflected in the forms of early projects (e.g., blobs). Digital designers drew from other arts like filmmaking, which lent a literal fluidity through the translation of animation practices into built form. Digital geometric experimentation based on metaphor and biomorphic influence soon raised a new question: Was it possible to actually build the complex geometries that the computer could so easily model? Gehry and Partners developed the spinoff company Gehry Technologies to translate architectural designs into physical form, and adopted tools such as Catia and Maya from the automotive, aeronautical, and shipbuilding industries to do so. Though this second phase of technological engagement constituted an important shift away from speculation toward new modes of making using fabrication technology, the resulting forms and spaces had not yet evolved beyond the seductive and sensuous shapes that the computer allowed.[10]

Rethinking fabrication processes, representational tools, and material explorations was necessary to make the complex forms that resulted from abstract precedents. As digital production evolved, natural systems (initially used as formal inspiration) further influenced deeper, performative aspects of the buildings, systems, and materials being developed. Works by Philip Beesley, such as his Hylozoic Veil (an "artificial forest" of biomorphic fronds, filters, and proximity sensors) respond to the museum goers who circulate through its space; smart materials like the

thermobimetal (two metals with different thermal expansion rates laminated together) skins, in development by Doris Kim Sung, to create natural ventilation in response to temperature variation; and the organic brick "Hy-Fi" structure that was the winning PS1 Courtyard installation in 2014, by David Benjamin of The Living, that used farm waste and a cultured fungus to create biodegradable brick-like structural modules, all draw from natural influences to radically affect the design and making of built environments.

In the mid- to late 1990s, as CAD/CAM software developed and became more user-friendly, methods of representation also began to evolve. 3D modeling, 4D simulation, and BIM allow for drawing types that are not dependent on Euclidean modes of seeing through Renaissance perspective, Cartesian grids, and descriptive geometry. "However we have yet to fully engage the complex spatial organizations that are made possible perhaps because the same software often present their architectures within a perspectival frame and an orthographic coordinate system," says Allen. "As a result, such techniques too often produce exquisite objects that represent formal and material complexity, but that produce rather simple, cave-like interior space and undefined relationships to external conditions."[11]

Contemporary practice operates within Allen's third phase of engagement with digital technology, in which designers are exploring its strategic and operative potential for spatial design. In this model of practice, the designer transforms agency by engaging with the design and construction processes at all stages. The promise of this current phase is to introduce feedback into the formal development system that takes into account material, manufacturing, economic, performative, and social inputs to allow for pragmatic and inventive spatial exploration; moving it past a formal, referential approach to a responsive one.[12]

With specific importance to the emergence of interior architecture, formal expression for its own sake is no longer valued in the way it once was, when it represented the expression of a new paradigm in practice. Dissatisfaction with formal fetishization was beginning to occur even before the economic recession of 2008, but it has been continually critiqued since then in light of what has arisen as more pertinent agendas like social

housing, disaster relief, and public interest design.[13] Though these agendas are not tied exclusively to any particular mode of practice or discipline, digital design represents the contemporary condition of our interconnected global world, the ability to respond at a fine grain to local conditions, and the open-source access to information that has the potential to democratize the process (once the infrastructure for such tools is more readily accessible). Digital practice has the ability to differentiate, customize, and empower those it serves through parametric design. This is related to the processes embedded within existing systems. Unless either designers figure out a way to "parameterize" qualitative aspects of space, or better yet, the tools themselves become more accessible to the populations in need of design without the mediator of a designer, this potential is still disconnected from the end result. This complicated relationship between progressive design and the communities it is built in are discussed by Joan Ockman in Frank Gehry's Guggenheim Museum in Bilbao.

What she defines as the "Bilbao Effect" refers to formally expressive and digitally enabled architecture being used as an economic stimulator through use of "starchitect" power to stimulate tourism. Ockman states, "The aura of Architecture (capital "A") is total; there is no disappearing act on the part of the author."[14] In addition to the Bilbao Museum having Frank Gehry's clear stamp of authorship, the project also initially faced resistance to having the first major contemporary cultural undertaking in the fiercely proud Basque region of Spain – being a branch of an American institution. Ockman says the conversation shifted somewhat after the museum's successful opening, "for now the museum's triumph has led to a revised judgment. Possibly a building in a provincial locale can have a radical cultural effect only when it is cosmopolitan enough to enter into a wider conversation."[15] Furthermore, Bilbao received notable criticism for the disconnect between its formal and spatial qualities, as well as the inefficiency of its galleries. Its exterior was privileged to the regrettable detriment of its interior. This raises the question about both the initial and the enduring impact of an outside technology and non-contextual style being introduced into a "provincial locale." Similar criticism can be seen in

disaster relief housing where the well-intentioned "white savior" often ends up doing more harm than good. In short, Bilbao embodies the quintessential notion of a spatially challenged form.

The great advancements of digital technologies are also their great challenges.[16] This can be said of the development in any age. Referencing the mission of the modernist designers, Gropius states:

> Today we are in a position to prove conclusively that the outward forms of modern architecture are not the whim of a few architects hungry for innovation, but the inevitable consequential product of the intellectual, social, and technical conditions of our age. It has taken a quarter of a century of earnest and pregnant struggle to bring these forms into being – forms which evince so many fundamental structural changes when compared with those of the past. I think the present situation can be summed up as follows: a breach has been made with the past which enables us to envisage a new aspect of architecture corresponding to the technical civilization of the age we live in; the morphology of dead styles has been destroyed and we are returning to honesty of thought and feeling; the general public, which was formerly indifferent to everything to do with building, has been shaken out of its torpor; personal interest in architecture as something that concerns every one of us in our daily lives has been aroused in wide circles; and the lines of future development have become clearly manifest.[17]

These words ring true more than a generation later as we experience our own radical shift in technology and the need to mobilize interior architecture's role in shaping the social spaces required to advance society.

To achieve enduring relevance, digital tools must be used in a way in which the complexities of their resulting forms, the space that is created, and their impact on social interaction is intentional and reflective. Radical shifts in practice – of which interior architecture offers potential – often have a social agenda. K. Michael Hays posits a practice between the

extremes of "instrument of culture" and "autonomous form" that informs a productive architectural project through the resistant and visionary authorship of the designer:

> In order to know all we can about architecture we must be able to understand each instance of architecture, not as a passive agent of culture in its dominant ideological, institutional, and historical forms, nor as a detached, disinfected object. Rather, we must understand it as actively and continually occupying a cultural place – as an architectural intention with ascertainable political and intellectual consequences.[18]

With specific regard to the agency of interior architecture, an examination of the space it creates is key to achieving this in the discourse of digital design.

An *interior* architecture: the definition of space

Each act of design is created and experienced within the context of its generation's understanding of space. In their opening essay of *Space Reader: Heterogeneous Space in Architecture*, Christopher Hight, Michael Hensel, and Achim Menges state, "Our repertoire of spatial concepts and our ability to understand and work with them remain relatively underdeveloped compared to the formal innovations, programmatic savvy, and critical sophistications of the past decades."[19] As a result of the unbalanced development of formal and spatial awareness, contemporary digital practice is not yet achieving its disruptive potential to define new forms of engaged and responsive space.

Space has existed in the architectural vocabulary only since the 1890s, when it emerged from the lexicon of German philosophers and gained relevance through its association with modernism. When using the term "space," one can refer to both an abstract theoretical concept and a lived social production. Adrian Forty defines space as both a thing and a concept by which we perceive the world:

> A willingness to connive in a confusion between these two unrelated properties seems to be an essential qualification for talking about architectural space. This confusion is present in most of what is said about architectural space; it finds its expression in the commonly held belief that architects 'produce' space.[20]

The confusion about what architects and designers "produce" when they make an interior environment continues today. Is it the physical design itself or the experience that the design creates?

What we mean when we speak of space in design is thus a somewhat nebulous and fluid thing. As Hernik Berlage stated at the beginning of the twentieth century, "Since architecture is the art of spatial enclosure, we must emphasize the architectonic nature of space, both in a constructive and a decorative sense. For this reason, a building should not be considered primarily from the outside."[21] Modernists, who adopted the German philosophical vocabulary for thinking about space, defined space in a number of ways. Three of the primary definitions, according to Forty, were space as enclosure (building elements are devices that enclose space, which is defined as the principal theme of modernism), space as continuum (continuous, infinite connection between inside and outside space), and space as extension of the body (formed by human activity).[22]

In *Production of Space*, Lefebvre ties the post-Industrial Revolution's awareness of space and its production in the built environment to the Bauhaus movement, which according to him developed a new global definition of space.[23] Lefebvre makes a direct connection between the production of space[24] and the changing modes of production in Fordist manufacturing processes at that time:

> The Bauhaus people understood that things could not be created independently of each other in space, whether movable (furniture) or fixed (buildings), without taking into account their interrelationships and their relationship to the whole. It was

> impossible simply to accumulate them as a mass, aggregate, or collection of items.[25]

He conceptually connects the way technology is used to produce things to how space is produced by calling the tools and resulting forms; the connectors and facilitators of the experience of designing to the inhabitation of that design.

> What happens in space lends a miraculous quality to thought, which becomes incarnate by means of a *design* (in both senses of the word). The design serves as a mediator – itself of great fidelity – between mental activity (invention) and social activity (realization); and it is deployed in space.[26]

The rapid emergence of digital technology marks a shift in the status quo from the modernist "homogeneous" space and requires we define the space of our time, which Hensel, Hight, and Menges propose is a "heterogeneous" space – that which is "ordered through differential relationships between diverse systems leading to a multiplicity of atmospheres."[27] This heterogeneous space is not neutral but active, and it has the potential to impact society through its agency by affecting change "through the *empowerment* of others, allowing them to engage in their spatial environments in ways previously unknown or unavailable to them, opening up new freedoms and potentials as the result of reconfigured social space."[28] The questions concerning space and interiority in the context of the technical and physical ethos of digital practice are a means of defining new forms of possible interaction.

Tim Unwin argues that Lefebvre, after many humanist Marxist scholars, sees the dialog about space as an opportunity to affect positive change on the world. By understanding the production of space, it becomes possible to understand ways of changing the shape of that society. It is not enough to understand what differentiates space. Critical interior architectural practice must incorporate an understanding of the social,

economic, and political conditions of a place and its connection to interiority, paying particular attention to underserved populations, in order to fulfill the modernist legacy of improving life for all through design.[29] By bringing together the technical tools and the conceptual understanding of the potential impact of such tools on the interior environments that are created through their use, designers have the potential to incorporate positive social change as a parameter in their creative process.

The spatial agency of digital praxis

Agency is the ability to act within societal structures. Critical agency presumes the capability of acting to affect change, and assumes the capacity of acting otherwise. Anthony Giddens explains:

> Agents are neither completely free as individuals nor are they completely entrapped by structure. Spatial agents are neither impotent nor all-powerful; they are negotiators of existing conditions in order to partially reform them. Spatial agency implies that action to engage transformatively with structure is possible, but will only be effective if one is alert to the constraints and opportunities that the structure presents.[30]

According to Giddens's definition, designers' ability to shape society is shaped by their understanding of the systems – social, historical, economic, and environmental – in which they operate. According to John Dewey, "The organism is a force, not a transparency."[31] He posits that experiences are neither purely mental nor objective, that the human character has an impact and agency in any experience that takes place, and experiences cannot be divorced from the environment in which they occur. This environment, according to Dewey, is both physical and social (including history, geography, and tradition in the social environment) and that those acting in it have an effect on the system itself.[32]

Digital designers both operate within an incredibly complex, pluralistic, and mercurial context and are uniquely qualified to synthesize and respond to these oftentimes competing forces by the very nature of the tools they use to operate. Computational design is, at its most fundamental, defined by a series of relationships that can adapt to a range of forces. Digital fabrication is the way in which designers are able to produce a customized design response to conventional interiors in an economically competitive way.

The disciplines engaging spatial design – architecture, interior architecture, interior design, environmental design, exhibition design, interaction design, and industrial design – are based on stable knowledge. However, advancement happens through disruption. In the critique of normative structures of practice, the alternative modes of operating propose new paradigms of how to operate. According to Nishat Awan, Tatjana Schneider, and Jeremy Till:

> Traditional architectural practice may be associated with predetermined action, or of anticipating the world dogmatically, through its habit of playing out established themes. Against this emerges a critical practice or rather to use the accepted word – "praxis" – which starts with an open-ended evaluation of the particular external conditions, out of which action arises with no predetermined outcome, but with the intention to be transformative.[33]

By using the potential of digital technologies to produce space, the public can be engaged in ways that broaden the discussion of how the interior built environment can benefit society. In their book *Spatial Agency: Other Ways of Doing Architecture*, the authors identify a movement in contemporary practice that capitalizes on an expanded field and its agency to affect change for a broader audience than the traditional clientele:

> "Spatial Agency" brings up a series of fundamental questions about how and for whom the built environment is produced, and probes conventional frameworks or old-established rules and regulations. Action arises out of this questioning: individuals and groups "bypass", "penetrate", or "hijack" institutions or other organizational structures; they work "open source", they work as volunteers for non-governmental organizations and charities; they understand the production of space as something that involves dialogue and always seeks the other; they recognize the radical potential of architecture, planning, and work to raise awareness and to put critical and speculative ideas in the next generation; they question the status quo; they understand making, writing, and acting as tactical maneuvers, but also as informed and committed action which affects the course of events. For spatial agency to be exercised to its fullest sense, though, these actions and interventions always take place through negotiation and deliberation, and ultimately bring about the empowerment of those involved.[34]

Digital praxis similarly expands the traditional definition of practice and generates new types of spatial issues and potentials through the fabrication of form. As the emerging practice of interior architecture matures and designers more fully realize its agency, new relationships between form, program, and space in the pursuit of social advancement and empowerment will emerge.

The nature of the digital design community is as interconnected, fluid, and responsive as the spaces that it produces. Digital designers are constantly reappropriating, reinventing, and redefining established practices. As part of the open-source "maker" community, they employ their agency by acting outside of the traditional structures of these practices to challenge the defaults of rectilinear form constructed using sheet goods and dimensional lumber. They aspire to a practice that shifts away from the

classical ethic of a formal whole to one that defines highly specific yet differentiated spatial relationships. According to Hight, Hensel, and Menges:

> Architects are not, after all, simply tools of power and agents of spatial abstraction; they do have a distinctive material understanding of space and its relations to social praxis as something that can be modulated in varying qualities and to diverse effects… . Indeed, if space is at once a distinctly modern feature of architecture and a constitutive problem of modern architecture as knowledge and practice, it is a blind spot of architectural discourse for that very reason. If architects are effective agents for the specialization of power as Lefebvre claims, then one must also accept that an architect is trained to have an intimate and perhaps a certain expert knowledge about space, even if it remains unarticulated as such.[35]

There are many forms of spatial agency in contemporary digital praxis that demonstrate aspects of fulfilling the potential of interior architecture as a transformative technical, spatial, and social agent. The intricate installations of Marc Fornes and THEVERYMANY promise a new form of interiority that is both heterogeneous and homogeneous; the material research of Achim Menges at the Institute of Computational Design premises the use of digital tools to reengage designers with the natural properties of the materials they use; perhaps most effective for the nature of this argument, WikiHouse's open-source, digitally driven, and environmentally responsive design provides a broad range of clients who would not otherwise be able to afford a designer's services to adapt and fabricate their own home.

Most of the computationally designed and digitally fabricated projects that are pushing boundaries on the technology and material fronts of interiority are still focused on process-based advances and do not yet address the experiential aspects of their design. The disruptive stage of this advancement is over, and now the work of understanding how to better harness these tools for the social good, and make visible the active space that

is produced, is beginning. The space is responsive and impactful, effecting change through the empowerment of others to engage with it. Modernist space may have allowed greater agency for inhabitants because of its neutrality, but contemporary space engages the public in a relationship where the human agent and the spatial agent are equal. This reciprocal engagement extends beyond just the user to the designer, who is also an active character in its production.

The challenge of contemporary digital praxis within interior architecture is to identify and legitimize itself both within the traditionally defined realm of spatial practice and within the public that consumes it by establishing a way of talking about its agency. Computational design offers ways of thinking in relationships that can begin to incorporate social, spatial, and experiential parameters alongside formal and performative ones. Digital fabrication as an act of making creates an interaction with space that is more conscious and shifts the understanding of our relationship to structure to a more conspicuous one. Even though designers working to expand digital praxis in interior architecture have become more specialized, they have gained the potential for their built work to serve an audience beyond the technocratic elite once the dialog expands beyond the formal results of these tools.

Notes

1 Scott Lash, Antoine Picon, and Margaret Crawford, "Agency and Architecture: How to Be Critical?" (Scott Lash and Antoine Picon, in Conversation with Kenny Cupers and Isabelle Doucet, Comments by Margaret Crawford), *FOOTPRINT* 3, no. 1 (2009): 7–20.

2 Ibid.

3 Special thanks to Shundana Yusaf from the University of Utah's School of Architecture for her guidance and editing during the development of this chapter. She gave significant input to help establish my understanding of the space of Modernist architecture in this section amongst many other invaluable insights and connections. Any mistakes or misinterpretations are solely my own.

4 Michael Hensel and Achim Menges, "The Heterogeneous Space of Morpho-Ecologies", in *AD Space Reader: Heterogeneous Space in Architecture*, ed. Christopher Hight, Michael Hensel, and Achim Menges (Chichester: Wiley, 2009), p. 199.

5 Walter Gropius, "Appraisal of the Development of Modern Architecture" (1934), in *The Scope of Total Architecture* (New York: MacMillan Publishing Company, 1980), pp. 62–63. Emphasis is from the original text.

6 Joan Ockman, "New Politics of the Spectacle: 'Bilbao' and the Global Imagination", in *Architecture and Tourism: Perception, Performance and Place*, ed. D. Medina Lasansky and Brian McLaren (Oxford: Berg, 2004), p. 234.

7 Branko Kolarevic, ed., *Architecture in the Digital Age: Design and Manufacturing* (New York and London: Taylor & Francis, 2004), pp. 32–33.

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9 Stan Allen, "The Future That Is Now", *The Design Observer* 3 (2012), http://places.designobserver.com/feature/architecture-school-the-future-that-is-now/32728/ (accessed 25 September 2014).

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27 Hight, Hensel, and Menges, eds., "En Route", pp. 9–37.

28 Nishat Awan, Tatjana Schneider, and Jeremy Till, *Spatial Agency: Other Ways of Doing Architecture* (London and New York: Routledge, 2011), p. 32.

29 Unwin, "A Waste of Space?", pp. 11–29.

30 Anthony Giddens, *Social Theory and Modern Sociology* (Cambridge: Polity, 1987), p. 220, as discussed in Nishat Awan, Tatjana Schneider, and Jeremy Till, *Spatial Agency: Other Ways of Doing Architecture* (London and New York: Routledge, 2011), p. 31.

31 John Dewey, *Art as Experience* (1934; New York and Berkley, CA: Perigree, 1980), p. 246.

32 Ibid.

33 Nishat Awan, Tatjana Schneider, and Jeremy Till, *Spatial Agency: Other Ways of Doing Architecture* (London and New York: Routledge, 2011), p. 29.

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Chapter 18

Transforming interior volumes

Volume + surface + mass

Jonathon R. Anderson and
Laura Lovell-Anderson

In the inextricable design continuum, form and function are balanced by science and mathematics as variables to design and realize objects, environments, and experiences. The result is a shift in systems of knowledge, thinking, and problem solving within interior architecture – a paradigmatic fluidity – emerged through the coupling of traditional tools and emergent software and digital fabrication. These digital technologies and processes yield unprecedented capabilities, allowing for physical and fabricated realization of designs that were once considered too complex or unbuildable. Through an amalgam of these techniques and technologies integrated within digital design and physical prototyping, designers are defining interior volumes using surface mathematics to develop autogenic design topographies at the interior scale and context. It is a practice that emphasizes the value of both the process and product through experimentation to challenge the designed surface and interior screen,

exploring the spatial characteristics of designed surfaces as tangible installations through an approach combining aggregates or modular component-based systems to manipulate volume, surface, and mass.

Agent-based visual scripting and computation is used as a medium for experimentation, decision-making, and problem solving to formulate dynamic surfaces and topographies. The digital design process expresses an algorithm to intervene in a system and segment a complex design query into several simplified sub-problems, and later reconstructed to create a solution.[1] To further underscore this concept, Wilensky concludes, "by enabling the rendering, simulation and visualization of the evolution of complex systems over time, the computer has proved an indispensable tool for making sense of complex systems and emergent phenomena."[2] Accordingly, emergent computational form-generation approaches to design applied in conjunction with digital and physical making encourage the examination of the complexities that compose natural forms and their corresponding internal geometries.

The process of transforming an interior volume in a realized, visual expression may rely on systems that are either abstract (intangible; concepts, theoretical notion) or physical (defined by material nature). This chapter, however, as a survey of the emerging process for transforming interior volumes through the development of autogenic design topographies at the interior scale and context, focuses on physically expressed systems. The formula for developing autogenic systems of design starts simply: *shape* < *surface* < *volume*. In the most primitive sense, shape is the two-dimensional primitives such as points and lines; surface is an interconnected set of points and lines that have length and breadth; and volume is the three-dimensional space enclosed by a collection of surfaces.[3]

Transformation of the interior volume through a systems-based approach requires the understanding that a system, a "set of elements or parts that is coherently organized and interconnected in a pattern or structure," is the logical basis for defining and transforming interior volumes via visible surface mathematics.[4] Individual characteristics of a system – the components, constraints, interrelationships, interface, boundary, purpose,

environment, input, and output – when aggregated, produce a pattern or structure within a system, representing an expression of an observed regularity, and exist in both biotic and abiotic systems.[5] Systemic articulation of such a set of elements or behaviors is used to form aggregates or modular component-based systems and, therefore, manipulate volume, surface, and mass. Geometric transformations, resulting from the physical expression of surface mathematics, are often simulated through a process of cell aggregation to generate volume.[6] Such practices of extreme computational control have emerged across various design disciplines, impacting both form and function. It serves to realize relationships between entities, develop surfaces and membranes, understand complexity and patterns of behavior, and add functionality.[7]

The design process of transforming interior volumes requires the application of concepts of autogenic design and systems theory to develop a model, an abstract representation of system developed to aid in the understanding and/or predicting of its behavior. The next sequence in transforming the interior volume is the modeling process, a rigorous method for creating and testing models. Systemic (and rule-based) computation and visual-spatial scripting are where a series of nodes or agents at the micro-level are extracted from a data source.[8] The visual representation of such is produced through modeling, characteristically in a collection of small components to ultimately compose one larger surface. Emerging design scholarship describes the process to be characteristically *autogenic*, where "auto," is a prefix meaning "*of oneself*," and "genic," is an adjective meaning "produced or generated by." Autogenic can, therefore, be understood as an object, system, or process that is characteristically self-generated or self-produced, and in such a formula, these variable inputs allow for the calculated manipulation of the surface parameter, environment size, and variations in the number of nodes or agents.[9] However, such transformation requires a hybrid process combining foundational design elements – volume, surface, and mass – with both spatial geometries and systems theory.[10] These systemic components are organized into larger surfaces or screens to form aggregates or large amounts of unbound elements lying in loose

frictional contact, therefore subdividing a system into smaller parts that can be independently created and used in different systems.[11]

Systemic theory and computation as applied to spatial systems in interior architecture and design allow for the conceptualization, modeling, and fabricated realization of designs that were once considered too complex or unbuildable.[12] Accordingly, form and function are generated and informed methods previously used exclusively in science and mathematics sectors; these approaches as applied to design in conjunction with digital and physical making encourage the examination of the complexities the compose natural forms and their corresponding internal geometries. In the example of "Self-Organizing Cuticular Structures of Butterfly Wing Scales in *Callophrys rubi*," such an application of systems theory and modeling for the manipulation of system characteristics can be applied to formulate interior logic and architectural patterns.

Academic case study of *The Gyroid: An Investigation of the Self-Organizing Cuticular Structures of Butterfly Wing Scales in* Callophrys rubi

A precedent assembly by Janine Yeung, under the supervision of Professor Jonathon R. Anderson at Ryerson University School of Interior Design and completed in spring 2016, *The Gyroid* reflects an autogenic design topography that was generated through analysis and systemic computation of a surface. This work is based on the repetition and subdivision of a cell and submodules of a gyroid surface to which input parameters from a biotic system consisting of a 50% fill density and 50% porosity were applied.[13]

In the systemic development of the interior volume, the base geometry was a micro component within the larger macro surface to be contained within a cube to ultimately be aggregated through tiling in the mathematical logical of self-organization. This was achieved by extracting a series of the surface's edge curves, then mapping the edge curves on the

faces of the cube, in a manner that also attempts to preserve the vertices of the surface by assigning these to the corners of the cube. The optimized geometry is a locally minimized surface that contains six vertices and six curved edges, where each edge is in contact with a unique face, and each vertex is in contact with a unique corner (Figure 18.1).

The autogenic systemic input data as applied in *The Gyroid* was derived from the occurrence of the gyroid structure in natural nanostructures, specifically in the analysis of wing scales in the butterfly species *Callophrys rubi*, where the cuticular structure adopts the gyroid form (Figure 18.2). The butterfly wings of this species are composed of chitin, a polymer prevalent in organism exoskeletons. In this species, these structures are organized in gyroid forms to produce structural coloration and the effect of iridescence when light moves through these geometries. The gyroid nanostructures are composed when chitin (which polymerizes in the larval stage of the species) is deposited in the extracellular space of a scale cell (double gyroid). Following chitin deposition, the cell degenerates and is transformed to a single gyroid structure, leaving an interconnected network of chitin in air. The resulting chitin network satisfies a condition of 50% structural volume and 50% air or porosity. This parameter becomes the primary input that will be applied to the submodules. By integrating these parameters, the autogenic characteristics of the biotic system interact with the self-organizing logic of the mathematical surface to produce the final component geometries.

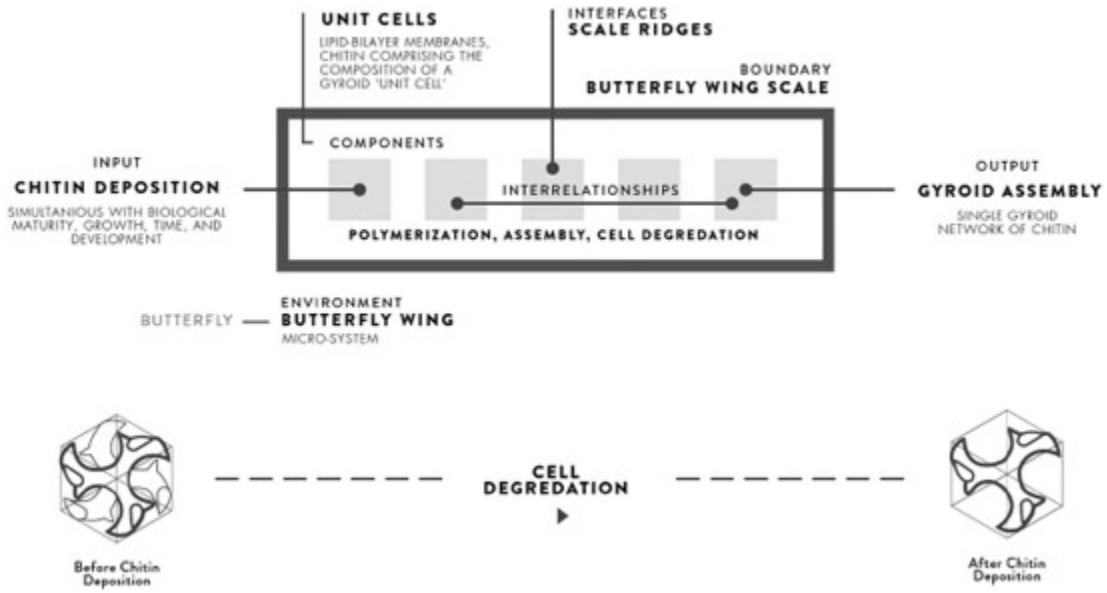

Figure 18.1 System characteristics – the components, constraints, interrelationships, interface, boundary, purpose, environment, input, and output – organized to produce a pattern or structure

Image credit: author

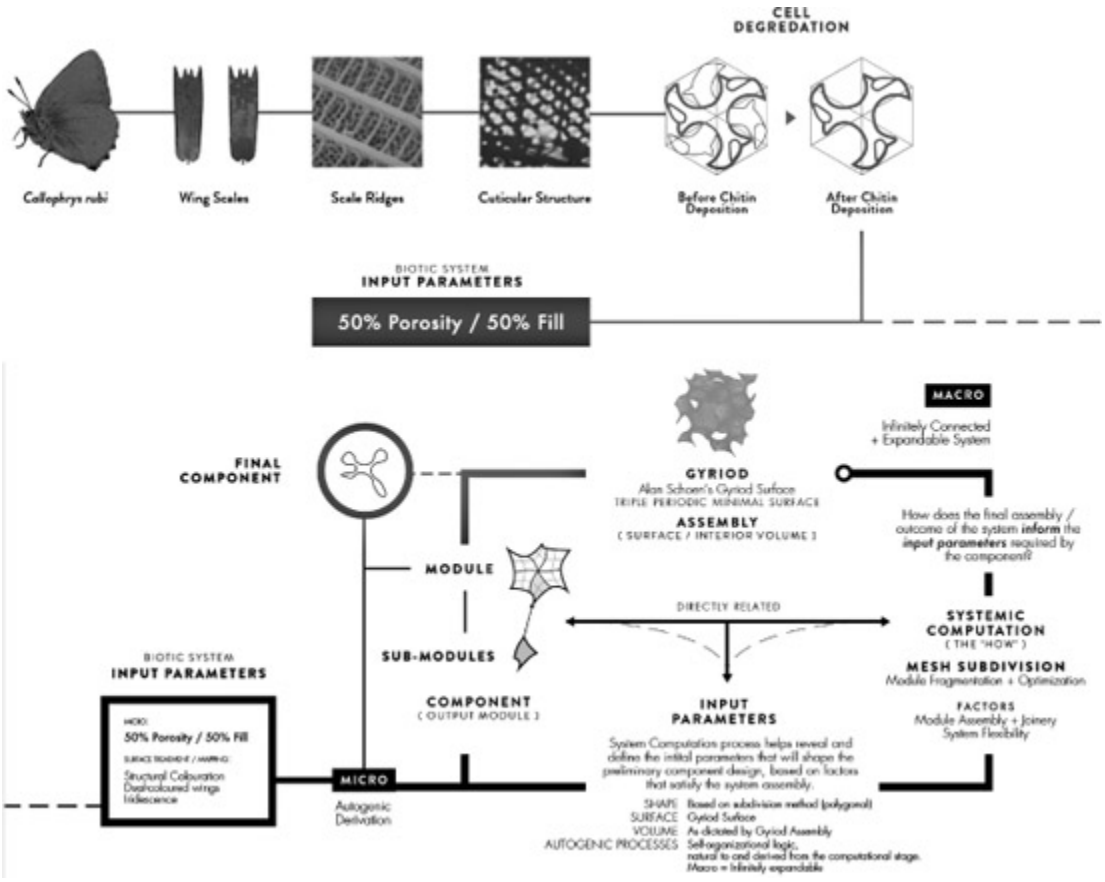

Figure 18.2 Shape developed through a series of autogenic systemic inputs and unit subdivision. Volume resulting from self-organizing logic, as demonstrated through the shape grammar and assembly of cellular gyroid units. The subdivision of larger surfaces to develop a series of simple modular forms.

Image credit: author

The conceptual framework consists of three parts: input of micro-level emergent phenomena to delineate spaces, simulation of simple shape grammars in visual scripting, and an output for visualizing the loop-based calculation by the various micro-level emergent phenomena and macro-level patterns. Using emergent software including K3DSurf, Yeung input a series of isosurface constraints and parametric equations to produce surfaces, and alter Cartesian values to manipulate existing surfaces, where x = 1.5, y = 1.5, z = 1.5 in the trigonometric approximation: cos(x) * sin(y) + cos(y) * sin(z) + cos(z) * sin(x) = 0. A paradigmatic fluidity emerges through a process and

product of experimentation through the manipulation of aggregates or modular component-based systems. The result is a topography and spatial geometry where the physical systems are visually self-organizing into a distinctive three-dimensional pattern.

The autogenic processes applied for spatial organization allows that "designs and their meanings [can] be viewed as the results of computations carried out according to rules of composition and correlative rules of description."[14] From the data inputs generated from the modeled systems, the physical and visual outputs may be realized through the coupling of traditional tools and emergent software and digital fabrication through both additive and subtractive means. The output can be translated through analog and digital means, with an array of modeling or physical prototyping realities.

Designers are defining interior volumes in an emerging hybrid process that combines foundational design elements – volume, surface, and mass – with both modular component-based systems and spatial geometries to manipulate autogenic design topographies. The application of such processes facilitates paradigmatic fluidity in the systems of knowledge, thinking, and problem solving in interior architecture and in the generation of complex systems and patterns. Incorporation of these processes of transforming an interior volume, as evidenced in the academic case study *The Gyroid* by Janine Yeung, reflects the value of systemic articulation as a method for problem solving, especially in an academic environment and undergraduate curriculum.

In a design studio charged with exploring the application of defined interior volumes with surface mathematics to develop autogenic design topographies at the interior scale and context, the outcome was a study of surface generation to imply volume and mass, controlled through input parameters and systemic components. Through an amalgam of analog making techniques and emergent digital making technologies, including digital design and physical prototyping, students explored the spatial characteristics of designed surfaces. Students worked in small collaborative groups to experiment with and challenge the designed surface and interior

screen through an approach combining aggregates or modular component-based systems to manipulate volume, surface, and mass. Through this process, students applied concepts of autogenic design and interior volume transformation to design a collection of small components to ultimately compose one larger surface. Coupled with traditional tools, emergent software, and digital fabrication, the transforming of the interior volume nurtures the exploration of the spatial characteristics of designed surfaces as tangible installations.

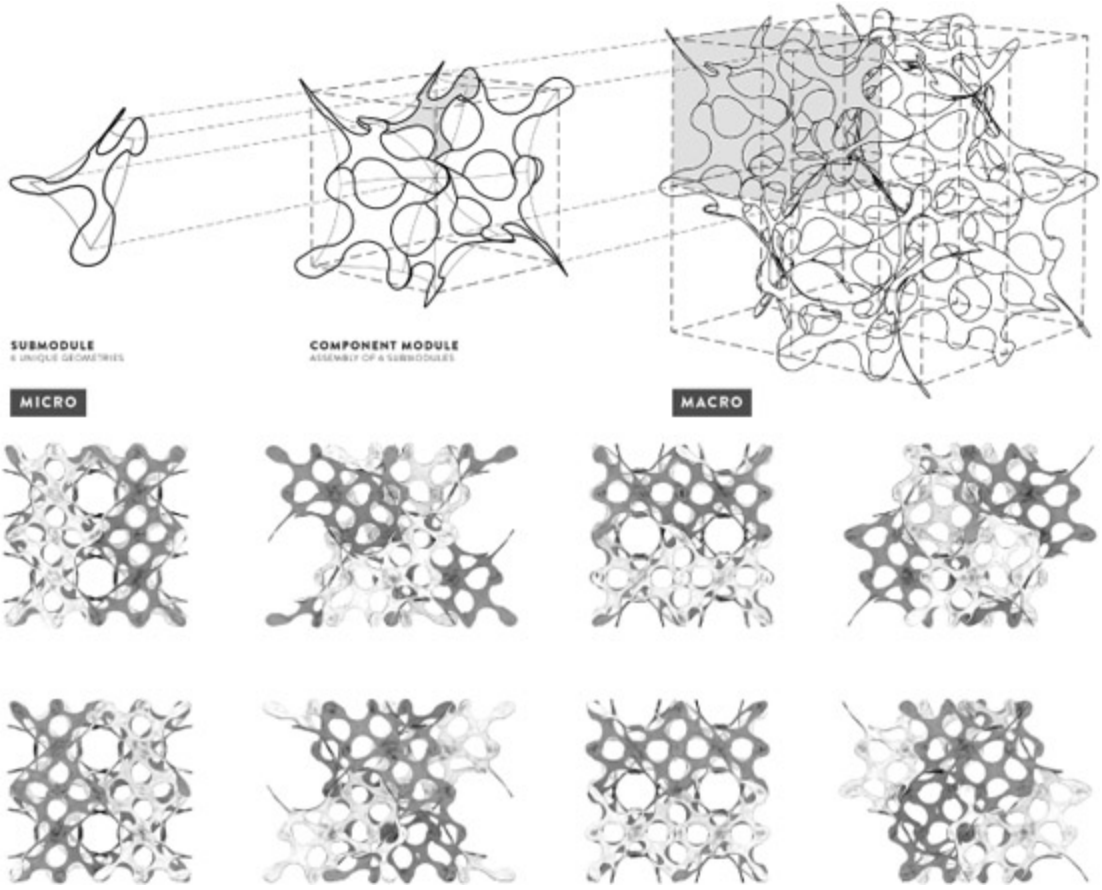

Figure 18.3 Through the interior volume transformation process, Yeung reflected: "there is often an ambiguity between invisible and defined boundaries in mathematical surfaces – and this may translate to factors of the component in regards to overall geometry relating to form flexibility. An initial subdividing process may introduce parameters necessary for the component design, including the general shape and the number of vertices in each module (dependent on the method of subdivision). This process stems from the notion of 'self-generated' modular forms as a result of a

subdividing process. The outcome should ideally allow for an articulate component organization about a substrate" (2016, p. 12).

Image credit: author

Notes

1 Donella Meadows, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Pub., 2009); I.M. Rocker, "When Code Matters", *Architectural Design* 76 (2006): 16–25.

2 Uri Wilensky, "Modeling Nature's Emergent Patterns With Multi-Agent Languages", *Proceedings of EuroLogo 2001 – Linz, Austria*, 2001.

3 Lionel March and George Stiny, "Spatial Systems in Architecture and Design: Some History and Logic", *Environment and Planning B: Planning and Design* 12, no. 1 (1985): 31–53.

4 Donella Meadows, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Pub., 2009), p. 187.

5 Donella Meadows, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Pub., 2009).

6 Lionel March and George Stiny, "Spatial Systems in Architecture and Design: Some History and Logic", *Environment and Planning B: Planning and Design* 12, no. 1 (1985): 31–53.

7 Donella Meadows, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Pub., 2009).

8 Uri Wilensky, "Modeling Nature's Emergent Patterns With Multi-Agent Languages", *Proceedings of EuroLogo 2001 – Linz, Austria*, 2001.

9 Evan Douglis, *Autogenic Structures* (New York: Taylor & Francis, 2009); L. March and G. Stiny, "Spatial Systems in Architecture and Design: Some History and Logic", *Environment and Planning B: Planning and Design* 12, no. 1 (1985): 31–53.

10 Jonathon Anderson and Laura Schoenthaler, "Materializing the Digital Realm", in *Textile Technology and Design: From Interior Space to Outer Space*, ed. D. Schneiderman and A. Winton (London and New York: Bloomsbury Publishing, 2016).

11 Michael Hensel, Achim Menges, and Michael Weinstock, *Emergent Technologies and Design: Toward a Biological Paradigm for Architecture* (New York: Routledge, 2010).

12 Evan Douglis, *Autogenic Structures* (New York: Taylor & Francis, 2009).

13 Janine Yeung, "The Gyroid: An Investigation of the Self-Organizing Cuticular Structures of Butterfly Wing Scales in *Callophrys rubi*", Prepared for Professor Jonathon R. Anderson, IRN 800

at Ryerson University School of Interior Design, 2016.

14 Lionel March and George Stiny, “Spatial Systems in Architecture and Design: Some History and Logic”, *Environment and Planning B: Planning and Design* 12, no. 1 (1985): 31–53.

Part four

Sensorialities

Chapter 19

Sensorial interior landscapes

Laura Garófalo-Khan

This chapter uses the artificial grotto as the touchstone for an exploration of contemporary interior architecture. The proliferation of organic form made possible through digital design and fabrication techniques, coupled with a conscious interest in reconnecting the human-made and the natural, make this unique typology a plausible model for interior architecture. Framing sensorial manifestations of ambient conditioning and performative ornamentation with interior spatial design in terms of biophilia, this chapter discusses projects expressing the sensual nature of the grotto's architecture without being confined by formal, morphological, or material conditions.

> A relatively immutable element in the ephemeral world of the garden – a place of repose and reunion, of solitude, seclusion, and shade; a site of assemblages of learned discourse; a museum … a sanctuary of muses and an abode of nymphs; a locus of enlightenment and poetic inspiration: a harbor for springs and fountains – the grotto is above all, a metaphor of the cosmos. Variety of form is almost as vast as variety of functions, with nature versus art as the leitmotif.[1]

The artificial grotto historically includes reworked, naturally formed caves, excavations, and architectural garden follies. An interior literally formed from the landscape – but intentionally disassociated from its context – does not index its exterior form or structure, making it a distinctively internal manifestation of form. In addition to its inherent interiority, there are several contemporary drivers that make the application of the grotto a viable model for a discussion of interior architecture. Digital fabrication, new materials, and a growing desire to integrate the greenscapes and natural flows of today's ecologically sensitive design philosophy are important. Furthermore, the grotto defines an imperative to break down the nature/culture divide concretized by the modernist movement. It can be linked with the theory and science of biophilia, which proposes that through the course of human evolution we were encoded with a biological connection to the landscape, systems, and ambient features of the non-human environment. Proponents of biophilic design maintain that this connection is critical to our psychological and physiological well-being. This theory is supported by studies that attempt to quantify the benefits of being exposed to nature.[2] Among other benefits, these studies credit exposure to vegetative/landscape patterns and natural systems with improved recovery time for hospital patients, productivity levels, and cognitive functions. They even declare that such patterns, whether organic or human-made, stimulate positive social behaviors.[3]

Biophilia represents an attitude toward nature that does not separate the artifice of humans from the living forms of the natural world.[4] Although much of this movement still focuses on conventional exterior and interior landscaping and views of vegetated grounds, the ornamental surface is recognized as a valuable ally in the "biophilization" of the interior. Architectural historian Kent Bloomer argues that despite the visual connection to landscape afforded by large picture windows of modern buildings, this relationship lacks an important haptic connection. The protective glazing keeps out all discomfort and danger, yet allows one to view the non-human environment while preventing people from engaging with nature. Bloomer finds that the "visual distantiation, physical

separation, and even a sense of supremacy over nature" inherent in the typical picture window is augmented by the "extreme sensual disconnection from nature" found in the deep interior space made possible through well-engineered environmental and structural systems.[5] He does not contest the necessity of either the window or the deep interior. Instead, he proposes that small-scaled, repetitive, or rhythmic ornament that "contests the material reality of the [modernist] box" be layered over the hard structure in order to subvert it, allowing for the multisensory experience necessary for effective biophilic design.[6]

Art Nouveau interiors and Frank Lloyd Wright designs habitually represented interiors that adhere to the biophilic tenets that promoted designs with sensory richness, an expression of motion, serendipity, and perceptible variation on a theme.[7] Not so much a lived-in building as a living building, the grotto also represents these qualities. Its occupants accept a different level of contact with the ambient and physical "nature" of the envelope; plants may grow from its walls; water may trickle down its surfaces to produce a multisensory environment that expresses the guiding principles of biophilic design.

The historical grotto

The Western tradition of the grotto emerged from the Mediterranean region where caves, often containing a natural water source, are plentiful. Ancient Roman sites, Italian Renaissance villa gardens, and British landscape garden follies display resplendent examples of artificial grottoes.[8] In her book, Naomi Miller addresses the classical grotto by identifying the changing aspects of its design. She points to the changing cultural conditions in politics and patronage, but more importantly in this discussion of biophilic design, to changing attitudes toward nature.[9]

Natural grottoes and their sheltered springs dotted the landscape of ancient Greece and Crete and were consecrated as sanctuaries. A gift of nature, they were a shared part of the commons. They were representative of a culture integrated with and responsive to the natural habitat. The found

grotto developed from a sanctuary into a constructed place of refuge that exploited the wet cave's ability to fabricate a distinct thermal environment. The combination of flowing water, earth as a thermal sink, and deep shadows that maintained the space cool and fresh made it a most desirable space in the Mediterranean climate.

The artificial grottoes found in the gardens of majestic Roman villas exhibited a radically different attitude toward nature. No longer bound to a natural spring or cave formation, it was a constructed architectural space whose location depended on its patron's desires. The desire to control nature, manifested in the Cartesian order of the legion town, is evident in the *nymphae* (sanctuaries devoted to nymphs) which were complex, constructed hydraulic marvels reveling in the pneumatics of water. While still a religious sanctuary, the grotto was also a component of a constructed landscape infrastructure; refuge for sensorial delights and leisure indicative of its patron's wealth.

In the fifteenth and sixteenth centuries, the ancient Roman models of the architectonic nymphae and the rusticated cave were appropriated as places of refuge and revelry in Renaissance and mannerist villa gardens.[10] These constructions usually represented the main aspects of the natural grotto: they were (at least partially) embedded in the ground, they integrated a water feature, and the interior surface was articulated and distinct from its exterior. The water systems found in the model of the nymphae were often surpassed by new techniques that represented the evolving humanist relationship with nature as one of servant and served. Neptune's Grotto in the Villa d'Este had a complex water infrastructure that moved the performative water works supporting physical comfort and visual interest of less ambitious projects to the fabrication of an aural and visual event. Recently restored, the water organ associated with the fountain engages visitors in a daily ritual of play, unlike earlier versions whose rituals were defined by the worship of natural forces. The Renaissance grotto was not simply an expression of man's control of nature, but also reflected his ability to redesign nature.

Like those of their Roman predecessors, Renaissance models depicted landscape or natural motifs on interior surfaces. Painted Arcadian landscapes, sculptural stone, and shell work covered the walls. In some cases, such as the Grotta Grande at the Boboli Gardens in Florence, the rooms were populated with allegorical sculptures that intended to draw the visitor into an alternative reality. These narrative spaces expressed the morphology of the cave with its earthen enclosure. Interior and exterior could be separated by two inches or two hundred feet. The immeasurable depth of the poché between the inside and outside enhanced the separation between the two worlds. While this boundary's physical presence implies great thickness, it undoes itself through the greater perspectival depth of its inner caparison. In the Grotta Grande, this layer was alternatively painted with Arcadian landscape views that distanced the visitor from the exterior reality, or it was covered in fantastical stone narratives, live plants, and trickling water which took the visitor into an allegorical world. The interior was designed to appear like a ruinous incarnation of Roman antiquity, displacing the viewer both physically and temporally. Adding to the nebulous nature of the boundary condition, the entry to the fabricated naturalistic interior was covered with an architectural façade.[11]

Due to the popularity of Italianate architectural motifs in England in the seventeenth century, the grotto proliferated in the picturesque landscape gardens of country estates. Although complex excavations abound, many English grottoes were actually interior rooms, cellars, or aboveground pavilions. This is due in part to the cool climate, which does not make the cooling properties of the subterranean version very appealing. Proponents of neoclassical architecture with abundant funding, like poet Alexander Pope and landscape designer William Kent, built them to pay homage to the classical tradition rather than to make a comfortable refuge.[12]

Although the naturalistic cavern came into fashion in the mid-1700s, there was a broader predilection for grottoes modeled after the fourteenth century example in the Villa Pietra near Florence, where every surface was covered in shells, pebbles, crystals, and glittery stone in geometric configurations, ornate patterns, or menageries of human and non-

human characters. One of the earliest existing examples, the complex shell mosaic room at Woburn Abbey in Bedfordshire, sits within a building rather than an excavation.[13] The grottoes at Margate (Kent) and Goodwood House (Sussex) are prime examples of the eighteenth century box-like spaces that celebrated their interiority through organic surface appliques. What qualifies these English follies as grottoes has more to do with the sensuality of surface treatment than morphological association to a cave.

As the British style evolved, the chosen materials exploited the potential of the surface to reflect and refract dim light coming from candles, hand-held lanterns, and small window slits. Bridging the geometric and the organic, the pictorial, and the exotic, these surfaces pulsated, shimmered, and flowed. They were not attempting to replicate nature, but to create a new cosmology, a hidden world in the tranquil English countryside, a space of emotional exaltation and even horror to match the sublime bent of contemporary literature and art. The English landscape garden grottoes did not stop at the redesign of nature, but created extravagant psychological experiences that represented license to manipulate human nature as well.

The grotto lost favor, morphologically and conceptually, with the advent of modernism and its coupled desire to separate non-human nature from the human-made and eliminate superfluous embellishment. There are few instances of constructs calling themselves grottoes in recent architectural history. A notable exception is the Grotto of Meditation for New Harmony (1964) by Frederick Kiesler. This unbuilt structure can be seen as the predecessor of the thin-shelled constructs popularized by multiple digital fabrication techniques today. Like Kiesler's proposal, the current shells have an important distinction from grotto morphology: their internal form is expressed as a sculptural object. Another marked difference is that these fluid spaces most often do not engage the sumptuousness, tactility, and rhythmic sequencing of ornate pattern previously exhibited.

As the Classical structure is partially defined by the presence of a water feature, we can easily connect the historic grotto to contemporary subterranean water spaces programmed for relaxation and sensorial awakening, such as Peter Zumthor's Therme Baths at Vals. While

superficially it relies on siting (a local hot spring and a mountainside for its historical connection), more poignantly, it also emphasizes the sensuality of immersion into a material condition. Both the earth and the water that occupants submerge themselves in define a corporeal engagement with a mass. Emphasizing the immutable mass of the ground, passage between inside and outside is extended, as are internal thresholds. Light streaks though minimal apertures making it a third, more ephemeral visible volume that the body can engage. The occupation of the mass has a sensual resonance employing a site strategy and thermal conditioning of the entire building, rather than an architecture focused on its own interiority.

Biophilia of the ornamental surface: a new imaginary for deep interiors

Focusing on interior architecture rather than whole building design, the next examples address the sensorial articulation and "programming" of the ornamental interior surface. Kent Bloomer advises that to develop biophilic interiors for modern boxes, the box needs to be dissolved from inside by what he calls the "dynamic line work of ornament." This embodies three formal acts:

> First is rhythmization (especially a driving syncopated formation of rhythm); second is a spectacle of changefulness … ; and third is a composition of dynamic engagement or competition between different species of things. All of these … convey measures of indefiniteness, temporality, impermanence, mystery, ambivalence, and growth. None of them necessarily assert the order and harmony that is generally assumed to be a positive emblematic property of basic architecture, but all of them proclaim life, which is the subject of biophilia.[14]

This understanding of the relation of biophilic design to ornament, and in turn to the model of the grotto, indexes contemporaneous projects

expressing the sensual nature of its architecture without being confined to the morphological or material expression of the historical model. The three examples – a small built work, an installation, and an unbuilt project – are radical expressions of performative ornament.[15]

Responsive ornament

Natural or artificial, sacred or profane, the grotto is an event space, not a place of quotidian habitation. It is not only a place outside the normal condition, but also a place that envelops its occupants in its own cosmology. Ornament, much like the grottoes it populates, is a way of defining a self-contained cosmology that does not need to reflect the local conditions in which the decorated object (or building) is made. Like the flowers of a garden, these components are free to fabricate an alternative ecology in a physical sense, which in turn engenders an alternative cosmology in a conceptual sense.[16]

The installation *Hylozoic Soil* (Figure 19.1) by Philip Beesley is part of a series of site-specific installations that employ a visual language that defines fully immersive cosmology as otherworldly as the fanciful grotto in its original conception. Components of these sensuous installations respond to the visitor's presence, while others are programmed with global or rhythmic actions encouraging visitors to interact with the space. In his article, Bloomer explains that touching and the possibility of touching are critical to establishing the connection with nature that biophilia promotes.[17] This set of luminous, cave-like spaces that have been deployed across the globe over the past five years is a haptic wonderland. The responsive surface is covered by hundreds of feathery digitally fabricated units that take on different shapes due to their placement and activity. Microprocessors, proximity sensors, and globules housing chemical reactions are deployed with them on a net of mechanical acrylic components whose materiality augments the ethereal and fragile quality of the vaults that envelop the visitor. Its programmed activity engages the occupant in a delicate dance, like the Italian fountain grottoes with their orchestrated sprays and splashes.

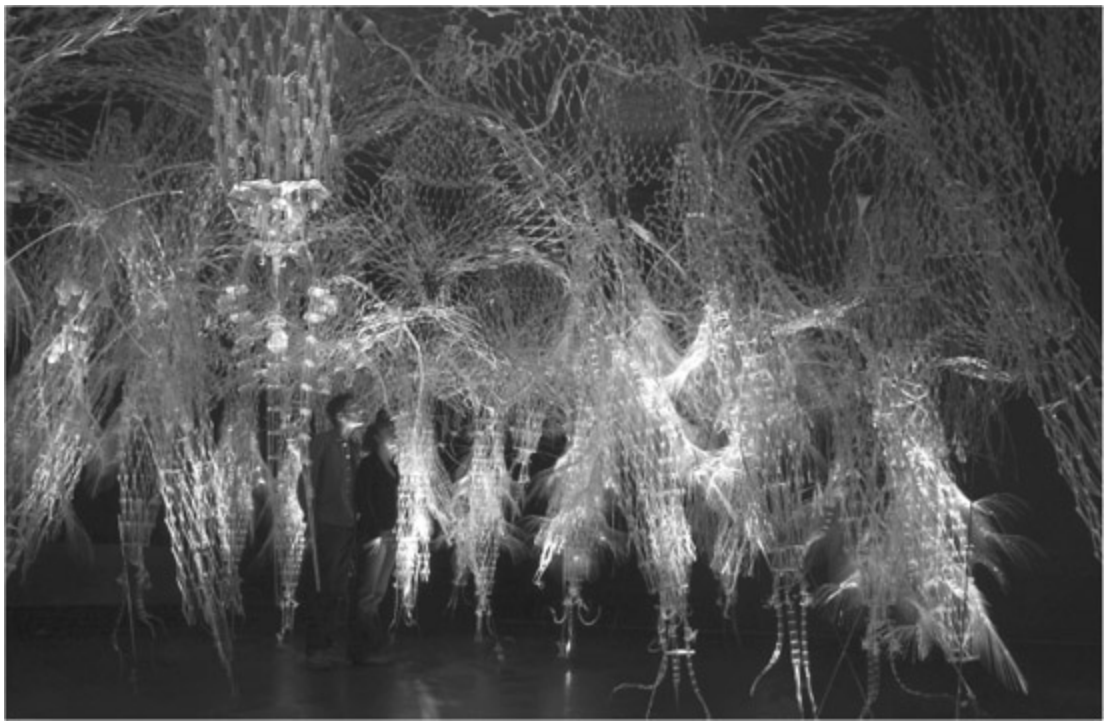

Figure 19.1 *Hylozoic Soil*, Installation at the Montreal Beaux-Arts Museum by Philip Beesley (2006)

Image credt: © PBAI

As in the grotto, the geometry of the armature is undermined by the organic nature of the units and their relation to one another. More critically, the structure that actually makes the interior possible is inconsequential. There is no desire to refer to the way that the vaulted space is structured or how the elements are kept out. The dissolution of the Cartesian bounding box obstructing biophilic integration of the natural and the human-made is accomplished through this shimmery interior landscape. It alludes to aquatic colonies of organisms that respond in unison to local and global stimuli. Described as an artificial forest by its designer, it awakens not only the senses, but also the imagination, as it delves into the uncanny nature of a sentient environment.

Geometry undone

A contemporary project that actually takes on the term is the *SOL Grotto* (Figure 19.2) by Rael San Fratello Architects.[18] It deviates from traditional examples as it is not embedded in the earth but is a freestanding box. The *SOL Grotto* adheres to the grotto model in four ways: its association to water, its sensorial provocation, its intent as a place of rest in a garden/park, and its focus on an interior redefined by the articulation of a performative boundary that presents a "mediated experience of water, coolness, and light."[19] Inside the small space is a discontinuous surface made of luminescent points and lines. Composed of over one thousand glass tubes of varied size embedded into a simple grid pattern, the resulting pattern is distorted by its own three-dimensionality. The conceived pattern changes as the point of view changes. The dynamic effect of the geometric aggregation of tubes resembles the flow of dancing shells arrayed in geometric patterns in historic shell houses.

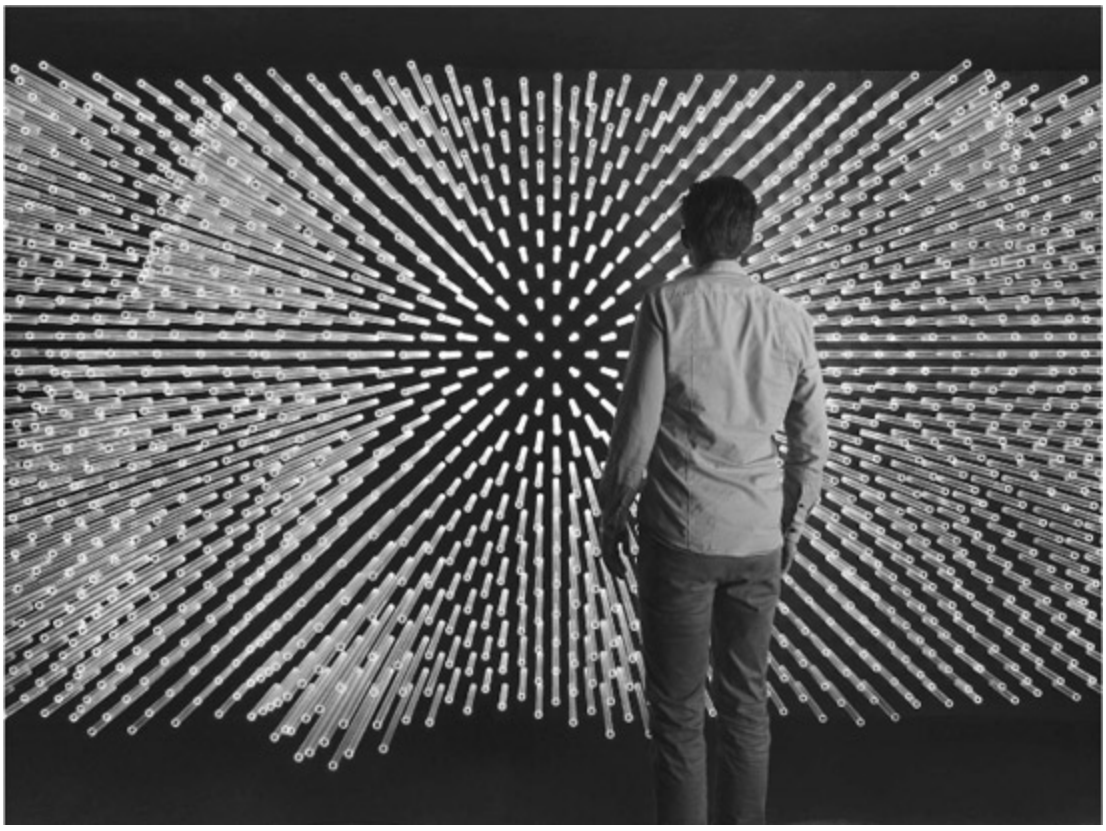

Figure 19.2 *SOL Grotto* at the Berkeley Botanical Gardens by Rael San Fratello (2012)

Image credit: Matthew Millman

The architects playfully deliver the requisite water feature of the classical grotto through visual and aural manipulation of the tube wall. They propose that "collectively, the tubes take on the form of a cave wall or a waterfall, evoking Plato's *Allegory of the Cave* where shadows, light, and sounds call reality into question."[20] The play of bluish light and the sound transference from a nearby waterfall alludes to the spring and the luminous quality of crystals and gems embedded in the grotto's surfaces. Paradoxically, the tubes also behave like the thick earthen boundary of the subterranean space, providing refreshment as they infuse the space with cool air, provided by the Venturi effect, rather than the thermal sink of the moist earth. Finally, the tubes also deliver unrecognizable images of the garden outside that, like the landscapes painted in the artificial grotto surface, create an alternative image that dissolves the wall between the inside and the outside. They simultaneously transport the observer to an alternative, and perhaps otherworldly, landscape. As in the historical examples, this interior architectural landscape functions not only on the physical senses, but also on the imagination, as the occupant cobbles together the disparate components of this sensorial experience.

Porous Poché

Bienvenidos al Sur, a proposed exhibition hall for the Spanish Pavilion of the 2015 Milan Expo by Aybar Mateos Arquitectos (Figure 19.3), takes the idea of a biophilic building to its ultimate conclusion by creating a building from a thick layering of plants. Like the grotto, it is a literal garden room, an interior in the exterior; its set of connected rooms is formed by the landscape that provides an infrastructure for verdant growth. Unlike the grotto, it is made of the tectonic frame system espoused by modern architecture, rather than the stereotomic system of the earth mound.

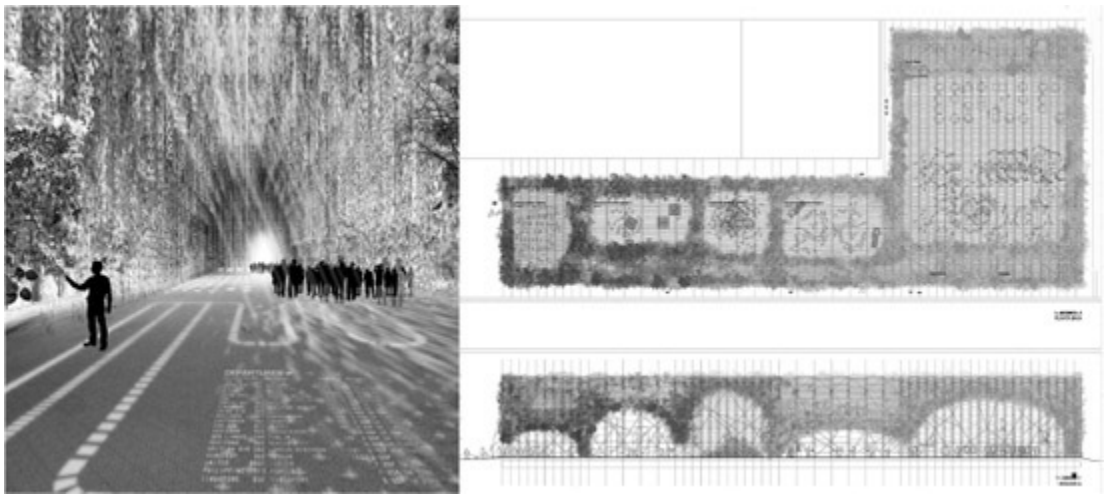

Figure 19.3 *Bienvenidos al Sur* a proposed exhibition hall for the Spanish Pavilion of the 2015 Milan Expo by Aybar Mateos Arquitectos

Image credit: © Aybar Mateos Arquitectos

The architects consciously sought to work against the traditional enclosure that isolates the interior from the exterior. There is no continuous weather or thermal boundary, just a thicket composed of Spain's agricultural products forming domed spaces of varied size. Containers holding the root balls hang from the frames in a rational pattern determined by farming metrics, but the foliage engulfs them and creates an organic discontinuous surface. From the exterior, this structure looks like a stack of flowering plants. Once inside, the porosity of the boundary becomes apparent. The diffused boundary modulates moisture, light, air, smell, and sound. Light pours through the pores, but the layers of leaves, like those of a tree canopy, keep the interior dry. The spaces progress gradually from the tight, humid, and dark entry space toward brighter and drier ceremonial space. Embedding the visitor in changing qualities of light and sound, the density of the air within is verdant. This literal manifestation of biophilic design aims to embrace nature in design for all the senses. The architecture dissolves; what remains is a porous floral poché.

Freedoms and constraints

The three projects discussed in this chapter are distinguished by their freedom from the conventional constraints of architecture. They do not address the environmental envelope, the structure that holds them up, or the exigencies of program. Their tactile, deep surfaces form part of a performative system that, like the grotto itself, is defined by dynamism and exuberance conscripted to create delight. These examples embody extreme attitudes toward our relationship to the non-human environment, specifically in their exploration of the "ornamental" surface. Like nature, they rely on the divergence of the unit from its pseudo-mechanical repetition to create a sensual interior layer like the grotto. Frank Lloyd Wright, whose work is often cited by proponents of biophilic design, states that nature is excessive in its design. Like ornament, it fulfills a purpose through repetition, redundancy, and articulation of small performative parts. Architectural historians and theoreticians like Antoine Picon, Oleg Grabar, and Georg Vrachliotis tout ornament as an index of the prevalent ordering systems relevant to a given culture. The ordering system of today, bound to the endless variety of parametric functions, expresses emergent orders. It also expresses the wonder inherent in understanding the intricacy and variability of natural systems.

Such projects offer the potential to redefine an interior environmental aesthetic – in particular, one that defines a sensorial interior landscape and bridges the disconnect between the constructed shelter and the natural environment. As with the historical references, the ingredients of these interior architectures may be appropriated from nature, however the result is far removed.[21] These contemporary grotto-esque structures dismiss the dichotomy of art and nature. They are both art and nature, both utterly artificial and full of life.

Notes

1 Naomi Miller, *Heavenly Caves: Reflections on the Garden Grotto* (New York: George Brasilier, Inc., 1982), p. 7.

2 Although the word *natural* is no longer applicable once we acknowledge we have entered the *Anthropocene*, a proposed new geological epoch that recognizes humanity's impact on our planet, for the purposes of this short text the term will be synonymous with the non-human ecological, geological, ambient, and environmental features that are generally seen as "nature."

3 Stephen Kellert, "Dimensions, Elements, and Attributes of Biophilic Design", in *Biophilic Design, the Theory, Science, and Practice of Bringing Buildings to Life*, ed. Stephen Kellert, Judith Heerwagen, and Martin Mador (Hoboken, NJ: John Wiley and Sons, Inc., 2008), pp. 3–7.

4 Stephen Kieran, "Evolving an Environmental Aesthetic", in *Biophilic Design, the Theory, Science, and Practice of Bringing Buildings to Life*, ed. Stephen Kellert, Judith Heerwagen, and Martin Mador (Hoboken, NJ: John Wiley and Sons, Inc., 2008), pp. 243–246.

5 Kent Bloomer, "The Picture Window", in *Biophilic Design, the Theory, Science, and Practice of Bringing Buildings to Life*, ed. Stephen Kellert, Judith Heerwagen, and Martin Mador (Hoboken, NJ: John Wiley and Sons, Inc., 2008), p. 258.

6 Ibid.

7 Judith Heerwagen and Bert Gregory, "Biophilia and Sensory Aesthetics", in *Biophilic Design, the Theory, Science, and Practice of Bringing Buildings to Life*, ed. Stephen Kellert, Judith Heerwagen, and Martin Mador(Hoboken, NJ: John Wiley and Sons, Inc., 2008), pp. 227–233.

8 Christopher Thacker, *The History of Gardens* (Los Angeles, CA: University of California Press, 1979).

9 Miller, *Heavenly Caves*, p. 7.

10 Ibid., pp. 20–36.

11 Ibid., pp. 34–50.

12 Hazel Jackson, *Shell Houses and Grottoes* (Oxford: Shire Publications Ltd., 2001), pp. 4–23.

13 Built in 1627 by Isaac de Caus, a leading garden designer in seventeenth-century England.

14 Bloomer, "The Picture Window", p. 260.

15 Bloomer, "Ornament".

16 Kent Bloomer and John Kresten Jespersen, "Ornament as Distinct From Decoration", 2014, http://ornament-scholar.blogspot.com/2014/02/ornament-as-distinct-from-decoration_5274.html

17 Kent Bloomer, "The Picture Window", p. 256.

18 Project Team: Ronald Rael, Virginia San Fratello, Kent Wilson, Bryan Allen, Chase Lunt, Dustin Moon, Bridget Basham.

19 "Sol Grotto", Rael San Fratello, September 2012, www.rael-sanfratello.com/?p=1466 (accessed 10 December 2014).

20 Ibid.

21 Miller, *Heavenly Caves*, p. 12.

Chapter 20

From ambient environments to sentient spaces

Nataly Gattegno and Jason Kelly Johnson

There is a sense of frustration surrounding the mechanization of the American interior landscape; the thinness of the building shell creates an "informally planned interior" that must be mechanically heated and lit, leading to what Reyner Banham termed the "mechanical invasion" of the interior.[1] In response to this, Banham's *Standard of Living Package* proposed an alternative bundling of mechanical and technological systems that would allow the building shell to be even thinner (almost disappear) and the interior to become larger (almost endless) and more informal.[2] Plugged into an automobile, the quintessential enabler of the American Dream, the *Standard of Living Package* was more than a mere set of mechanical systems. It was an atmosphere maker, "breathing out warm air along the ground … radiating soft light and Dionne Warwick in heart-warming stereo … this could do something for a woodland glade or creek side rock that Playboy could ever do for its penthouse."[3]

Such projects highlight the need to respond to inputs and to produce variable, changing, and dynamic spatial experiences embedded with

layers of information. A need exists for a departure far from screens hung on walls, to instead explore the design of visceral, impactful, and immersive environments that not only transmit information, but also make it part of larger spatial experiences and sequences. The information harvested can be contextual, such as people passing by, local weather patterns, and sounds; or virtual, by picking up trending conversations in online social media forums or popular terms that people are searching in the vicinity. The creation of atmospheres, the development of visceral spaces of vivid experience, and engagement are key to these installations. They seek to produce gradients of enclosure and ranges of intimacy and interiority.

This kind of work has an established lineage of experimentation beginning in the 1960s and 70s with the work of Banham, Superstudio, and the larger ambitions of the canonical exhibition, *Italy: The New Domestic Landscape*, curated by Emilio Ambasz at the Museum of Modern Art in New York in 1972. With this conceptual backdrop, some contemporary design teams execute projects that are extensions of those developed by Banham and Superstudio where atmospheres, gradients, ambience, and networked energy infrastructures form the landscapes of our lives.

Campfires

Banham described two kinds of shelter historically created by humans: a shelter that avoided environment in its entirety, such as "under a rock, tree, tent, or roof," or one that was "actually interfering with the local meteorology, usually by means of a campfire."[4] The *Standard of Living Package* belongs to the latter category, and Banham made the case for the campfire having "unique qualities which architecture cannot hope to equal, above all, its freedom and variability."[5] The experience that Banham described suggests a gradient of multiple environmental qualities with different degrees of interiority. These spatial zones around the campfire could be utilized in multiple ways, allowing for the subtle creation of multiple interiors implied by simple environmental and, by extension, experiential variation. In this framework, the *Standard of Living Package*

was a sentient structure, one able to sense its surroundings and provide multiple gradients of space surrounding it. The provision of mechanical, technological, and even emotive support rendered the *Standard of Living Package* a broader energy provider, whereby "energy" was interpreted in an expanded sense, as an essential part of the infrastructure of our daily lives.

Projects like Future Cities Lab's *Lightswarm* (Figure 20.1) attempt to create a gradient of space around the installation while simultaneously tapping into the larger sonic energy field surrounding the site. *Lightswarm* is an interactive light installation in a state of perpetual flux. Responding to sounds harvested from the lobby of the museum and the surrounding city, this site-specific artwork activates a south-facing facade with swarms of light. During the day, filtered sunlight produces ever-changing patterns of shadow, while in the evening the facade is transformed in a dynamic electro-luminescent composition visible from the interior lobby, the garden, and the city beyond. Sound-sensing spiders attached directly to individual glass panels in the lobby transform the facade into a large-scale urban sensor, an instrument to sense the city, visualize its auditory pulse, and amplify its latent energies into cascades of light. Real-time data collected from these sensors are used to inform a swarming algorithm that guides patterns of streaming light. The resulting form is an artificially intelligent facade – a smart surface that can sense, compute, respond, and interact with its surroundings.

Figure 20.1 *Lightswarm*, Yerba Buena Center for the Arts, San Francisco, CA

Image credit: Peter Prato

The interactive qualities of *Lightswarm* enable it to be a direct register of the sonic environment of the surrounding city, as well as an activator of the spaces located on either side. By occupying the full facade of the museum, between the museum's lobby and a public park, *Lightswarm* negotiates the two grounds and allows for the engagement of both sides. The activity inside the museum is presented to the public, and reciprocally, the city invades the museum through patterns of light. Between these two realms are passersby, people heading to work or tourists, who can simply clap their hands to trigger a swarm of light to play around them for a while, circumnavigating the system and giving them the ability to take over. *Lightswarm* creates variable degrees and zones of occupation, from the intimate scale of clapping your hands or tapping a window to gain response to larger programmatic responses, such as sounds in the museum or the park, or city-scale activation as a bus drives past or a plane flies by. These

could be described as multiple interiors, multiple degrees and zones of activation that range in scale, scope, and perception as multi-layered, nested interiorities.

Microevents and microenvironments

By transforming the energy needs of the home into a sentient machine, Banham realized "the dream of the un-house" and proudly stood behind what could be read as "anti-architectural."[6] Banham saw this as an opportunity to dissolve architecture and the typical envelope between interior and exterior entirely, allowing space to become a nomadic and transient living system. Superstudio took that dissolution even further by calling for "a life without objects" and arguing for a landscape of energy and infrastructure subsumed into the grid. They proposed a landscape devoid of any enclosure, envelope, or environmental membrane.[7]

In their "Description of the Microevent/Microenvironment" for the *Italy: The New Domestic Landscape* exhibition, Superstudio envisioned a landscape of energy supporting all habitation. "We can imagine a network of energy and information extending to every properly inhabited area," they claimed, "the whole city as a network of energy and communications" was essential to the production of this landscape.[8] In this world, nomadism, impermanence, mobility, and transience were the norm. No inside or outside could exist and control if our environments happened solely through the regulation of energy. A new kind of urban condition emerged, one where spontaneous events and crowd gatherings could be triggered at any time in any location on the grid. Nothing and nobody was bound by built structures. "All you have to do is stop and connect a plug, and the desired microclimate is immediately created (temperature, humidity, etc.); you plug into the network of information, you switch on the food and water blenders …"[9]

For Superstudio, the whole world became neither an interior nor an exterior condition, but rather, a variable, nomadic, and ephemeral sequence of events and spaces – essentially the space around Banham's "campfire." This landscape could nurture a completely nomadic lifestyle, one

of many gradients of space and energy that can be tapped into at any time to create a Superstudio microevent. This energy landscape exists today and is available to be plugged into at the scale of the interior, the building, and the city. The sentient spaces that surround us are all plugged into this grid, thriving and pulsing with information to be harnessed. *Datagrove* and *Murmur Wall*, by Future Cities Lab, are two interrelated projects that experiment with plugging into the grid to create a surrounding microenvironment. Both projects harvest social media and harness information that surrounds us, which are critical to the way people communicate, navigate, socialize, and live their everyday lives.

Datagrove (Figure 20.2) thrives on information from its urban environment. It renders invisible data and atmospheric phenomena into variable intensities of light and sound. The installation provides shelter and a place of calm to contemplate data streams from sources near and far. The grove's luminescent fibers gently sway with the breeze, responding to the proximity of visitors with quiet, whispering sonic undulations. *Datagrove* functions as a social media whispering wall, harnessing data that is normally nested and hidden in smartphones; it amplifies this discourse into the public realm. The installation aggregates local trending Twitter feeds from a one-mile radius and whispers these back through speakers and liquid crystal displays woven into its framework. As a person approaches the installation, sensors are triggered and glowing orbs transmit what is being discussed in the social media space. Trending Twitter feeds appear as text on embedded screens; spoken into the space of the public courtyard, this data creates a space to experience and contemplate information.

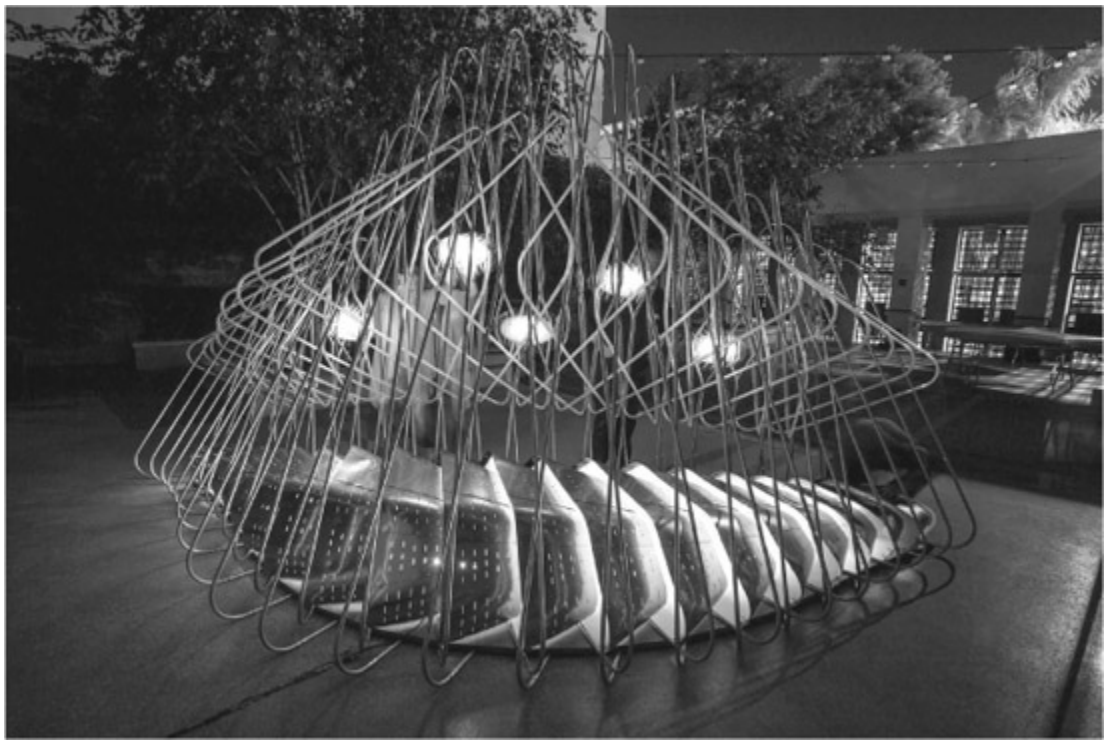

Figure 20.2 *Datagrove*, ZERO1 Art and Technology Biennial, San Jose, CA

Image credit: Peter Prato

Figure 20.3 *Murmur Wall*, Yerba Buena Center for the Arts, San Francisco, CA

Image credit: Peter Prato

Murmur Wall (Figure 20.3) offers a glimpse into the immediate future. It is an artificially intelligent, anticipatory architecture that reveals what the city is whispering, thinking, and feeling. By proactively harvesting local online activity via trending search terms on multiple search engines, *Murmur Wall* anticipates what will soon matter most to the city. Constructed from an intricate weave of steel and acrylic tubing, digital displays, and electronics, the *Murmur Wall* allows visitors to witness data streams weaving through the wall in the form of animated LED light and digital text displays. As a continuously evolving interface, the *Murmur Wall* provides a place for the city to share, indulge, and reflect on the real-time desires and anxieties of its citizens. What will the city around us be thinking, seeing, and feeling in the near future? What will matter the most? How will those desires manifest themselves?

Both installations create different levels of engagement: a sonic and textual range in which to hear and read the information transmitted, an ambient range of immersion in the information and the spaces created by the installations, an atmospheric range of mood, color, light, and effect upon experiencing the installation in its entirety, and an urban scale of looking down or through the installations at the city, observing circulation patterns and gathering spaces created by the artwork.

Feedback

In *Architecture or Techno-Utopia: Politics After Modernism*, Felicity D. Scott describes Emilio Ambasz's "anti-object" position in the environments he commissioned for *Italy: The New Domestic Landscape* exhibition, one of which was Superstudio's *Description of a Microevent/Microenvironment*.[10] Rather than "falling into the trap of passive abstention," these environments were "closer to his (Ambasz's) ideal of active critical participation."[11] Scott

continues to quote Ambasz in describing the relationship these environments had to their users as "an ensemble of interrelated processes, whose interaction results in constantly changing patterns of relationships."[12] The variability and participatory quality of engagement was at the heart of these projects; Scott notes this as a refusal of these objects "to adopt a fixed shape."[13] Notions of feedback and loops of interdependency that have become integral to today's understanding of the relationship between interactive spaces and their surroundings' data inputs are implied in this malleability and interactivity.

Scott further expands upon Ambasz's view of the ability of the domestic realm "to become a site of introducing 'forms and scripts' from the larger public realm into a space able to respond given the right equipment, to 'our desire for continuous participation in the self-shaping and self-management of everyday existence.'"[14] This inextricable link between an interactive space and its broader environment questions the role of the scale of interactions in the projects presented here. We now have the right equipment and are able to readily bring in forms and scripts from the public realm into determined spaces. The environments we can create can tap into anything from the local interactions of passersby, to the social media floating in the ether or local sonic patterns. Key in the ability for these projects to gain meaning is participation and active engagement which allows them to shape and change daily life.

This interconnectivity makes the installations presented here closer to Superstudio's microevents than to the remote "happy islands" that exist in pure isolation from everything that surrounds them or the magical "talismans" that exist for purely symbolic and representational terms.[15] Superstudio's polemic was one of a full and outright rejection of production and consumption. This was manifested in a life with no objects to be owned, one that relied on an egalitarian and all-providing energy infrastructure we could all plug into and feed into and from. This is in stark contrast to the complex and contradictory politics of the grid we plug into today, raising issues of ownership, privacy, access, and capitalism. Who owns the data? Who disperses it? What data is represented and how is it selected? These

questions demand us to develop ways to circumvent, interrupt, and question the information represented.

Murmur Wall, though apparently passive in its retransmission of information, has the ability to override the system with a series of whispers, messages sent to it from anywhere through an online interface. Analogous to graffiti on an urban surface, the *Murmur Wall* can be tagged with whispers sent to it by the public. These are transmitted as blue streams of light and text that overlay on top of anything else being transmitted through the wall at the time. The whispers counter the seemingly representational nature of the installation and explore ways to make it an active participant in the conversations happening around it.

Emerging trajectories

Lightswarm, Datagrove, and *Murmur Wall* endeavor to create microevents and/or microenvironments around them that aspire to be "campfires" in the urban landscape.[16] These public installations attempt to bring people together in varying degrees of proximity and intimacy by creating ranges of experiences and participation. They aspire to create ranges of atmospheres around them that compel varying degrees of engagement. Ultimately, these works create multiple and overlapping interiorities that may be applied at a various scales.

These installations map a future trajectory where gradients of environment begin gaining intelligence through their seamless integration with data – they become sentient. Sentience suggests an inherent ability of an object to perceive, sense, and feel its surrounding environment in a subjective and highly personal manner.[17] As daily life is inundated with information and data, this quality of sentience takes on a new role in the design of the spaces we inhabit. New modes of space are emerging that are immersed – sentient – in the data that we generate; surfaces that are streaming with text and color or screens that are transmitting real-time information. We readily expect every surface to be smart, to be data-rich and brimming with information. We swipe, slide, and flip through screens

with surprising ease, and as the screens grow in scale and size, we expect the same of the surrounding walls and surfaces. Rather than continuing to flatten, minimize, and strip the representation of information, what if it became robust, thick, deep, and part of the everyday spaces we interact with? A territory is emerging where these qualities of ambience and sentience are becoming hybridized and spatial. In response, designers seek to further experiment in this field where rooms, buildings, and cities become sentient and are integral to the transformation that renders the surrounding environment rich and deep with information to experience.

Notes

1 Reyner Banham, "A House Is Not a Home", *Art in America* 2 (1965): 70, 73.

2 Ibid., p. 74.

3 Ibid., p. 75.

4 Superstudio, "Description of a Microevent/Microenvironment", in *Italy: The New Domestic Landscape: Achievements and Problems of Italian Design*, ed. Emilio Ambasz (New York: Museum of Modern Art), p. 242.

5 Ibid.

6 Ibid., p. 79.

7 Ibid., p. 242.

8 Ibid., p. 242, 244.

9 Ibid., p. 249.

10 Felicity D. Scott, *Architecture or Techno-Utopia: Politics After Modernism* (Cambridge, MA: MIT Press, 2007), p. 126.

11 Ibid.

12 Ibid. Quoting Emilio Ambasz, ed., *Italy: The New Domestic Landscape: Achievements and Problems of Italian Design* (New York: Museum of Modern Art), p. 20.

13 Ibid.

14 Ibid.

15 Ibid. Quoting Ambasz, ed., *Italy: The New Domestic Landscape*, p. 12.

16 Superstudio, "Description of a Microevent/Microenvironment", p. 246, 248.

17 Ibid., p. 242.

Chapter 21

Design studio through the subtle revelations of phenomenology

Ross T. Smith

Architecture does not stand in isolation from its surroundings or humanity; its integration of interiority makes it valuable to our existential circumstance. In the words of Eugen Fink, phenomenology is "wonder in the face of the world."[1] It is an attitude of subtle revelation, of sensing by doing which permeates all aspects of working toward and through design. A motivation for exploring this philosophy in teaching design studio is to combine these two synergistic and seemingly complementary modes of engagement – the "integration" of interior architecture with the "being" of phenomenology. This makes phenomenology not simply a methodology, but an approach to being *of* the world.

In the phenomenological and experiential approach to design studio, the teacher becomes mentor, guide, and provocateur. An important aspect of teaching phenomenology to students of interior architecture is to transform the ways in which they perceive the world and themselves in it, as object, material, atmosphere, and states of transition and ephemerality. We exist, as do all substantive things, in a time-based condition of

becoming, transformation, and dissolution. Our human condition, therefore, is a reflection of the natural and constructed world – one of constant change and impermanence. Phenomenology, as a philosophical theory and experiential learning tool, combined with constructivist and phenomenographic methods in education, offers ways for students to gain the independence and confidence to approach the subjective and often indeterminate process of design.

Architectural education, particularly in design studio, expands students' perceptions of their capabilities in the world beyond either the current studio or university in general. It emphasizes their own lives, the future of who they can be as an architect or designer, and how they can contribute meaningfully in this rapidly changing world. Teaching and learning architecture is not only concerned with buildings, it is about the creative imagination of interior conditions. Our creativity enables us to conceptualize how the built environment can be interpreted to enhance our lives not as an imaginary landscape, but as imagined propositions for living.

Introducing students to the subtle aspects of our surroundings and how we sense them points out the delicacy of sensory qualities. This encourages them to give more attention to phenomenological appearances and revelations. As acuity and attentiveness develop, we can train ourselves to become attuned to the many new and exquisite moments of our phenomenal sphere. Aspects of a newly revealed world can be wondrous, but it can also be one of panic and insecurity, as evidenced by some students. Some students express these discoveries by saying they have never "seen" the world like this before and are shocked at how they could not have noticed the many subtle aspects of sensory experience. With a heightened level of perception, we can no longer ignore fleeting moments of delicacy, beauty, or pain.

Subtle revelation offers to the close observer many aspects of our previously unperceived world. Students of interior architecture must become highly attuned to their immediate location so they may learn to design environments that enrich the human body and mind. The outcome of a phenomenological and experiential approach to teaching and learning is a

transition to knowing and the transformation and integration of many levels of sensory perception into physical expression. How we perceive and integrate phenomenological and sensory experiences will determine our response and further actions as influenced by them. Finnish architect and theorist Juhani Pallasmaa states:

> The duty of education is to cultivate and support the human abilities of imagination and empathy… . Education in creativity has to begin with a questioning of the absoluteness of the world and with the expansion of the boundaries of self. The main object of artistic education is not the principles of making art, but the personality of the students and their image of themselves and the world.[2]

Subtle revelation and phenomenology

Phenomenology seeks the truth of reality, as French philosopher Maurice Merleau-Ponty stated, "We must not … wonder whether we perceive a world truly, we must instead say: the world is what we perceive."[3] In this aspect we maintain in ourselves an openness to the potential of revelation in order to retain the magic and thrill of life. Phenomenology describes our direct contact with the objective and non-objective world; that which is material, immaterial, and ephemeral. Phenomena can present as saturated spectacular events, according to Jean-Luc Marion, or more often be revealed as unsaturated phenomena which are subtle and restrained as faint outlines, vague traces, peripheral glimpses, wafts of breeze, shimmers of light, nuances of color, overlapping soundscapes, or delicate whiffs of scent.[4] The phenomenological tradition asks us for close sensory observation and description; therefore, one needs a poetic language to bring life to the phenomena, sensation, and interpretation. Gaston Bachelard offers refreshing poetics to phenomenology and architecture in an approach that is particularly interiorist. He describes the being of a phenomenologist:

> They are immediately conscious of being of and in the world, but the problem becomes more complicated for a phenomenologist of the imagination constantly confronted with the strangeness of the world. And what is more, the imagination, by virtue of its freshness and its own peculiar activity, can make what is familiar into what is strange. With a single poetic detail, the imagination confronts us with a new world. From then on, the detail takes precedence over the panorama, and a simple image, if it is new, will open up an entire world. If looked at through the thousand windows of fancy, the world is in a state of constant change. It therefore gives fresh stimulus to the problem of phenomenology. By solving small problems, we teach ourselves to solve large ones.[4]

Phenomenology offers a theory and a language to describe the world in a way that behavioral geographer David Seamon refers to as "vividness, accuracy, richness, and elegance."[5] This presents a clear attitude for students of interior architecture of how they can perceive and express their own direct experiences. Our body is a sophisticated device which is highly attuned to the physical world, and our brain, likewise, has acutely interpretive functions we may not even be aware of. Our immeasurable mind is that part of our existence which deals with the imagination, ephemerality, memory, vague connections between things, intellectualization, and most importantly, the interpretation of phenomena and the myriad sensations that we negotiate. The phenomenographic manifestation of these experiences in written, drawn, photographed, or modeled form is the way architects and designers communicate in specific language with others.

Sensing and perceiving

A deepening awareness of our physical, atmospheric, and ephemeral environments can inform us in ways of design that are exquisite and layered, rather than assuming the obvious or the already known. No object

can be perceived in splendid isolation devoid of all influence. Bodies and objects are revealed through the accumulation of adumbrations and conditionals. Adumbrations are facets of an object in space as it presents itself to you; they are often multilayered and multisensory. Husserl considered adumbrations as "conditional," in that our perception of an object is conditioned on how we approach it or what it offers us.[6]

An object can be perceived visually, tactilely, aurally, or in combination as a multitude of particular or overlapping sensory adumbrations. It is the multiplication of the facets of single perceptions that become an additive perception of the object itself. Adumbrations appear to us as singular experiences, and depending on the conditions and the movement of our body, we perceive each multisensory aspect of an object or space as confirmation of our understanding of the whole, as a composite of many iterations. An easy, yet direct, exercise for exploring this is stop-motion filmmaking using still photographic images to record a sequence of events, movements, or places. We can comprehend adumbrations as moments of time activated in relation to each other.

Adumbrations are not only visual, they are perceived in all sensory manifestations which combine to comprehend our being *of* a place: late afternoon sunlight washing across a wall, the smell of garlic cooking in the kitchen, faint music drifting from another room, the warmth on your back from a crackling open fire; with all of these sensory perceptions occurring in unison as you gaze at snow glistening on distant mountains. Adumbrations are not just a list of perceivables but gather to produce physical and psychological qualities. An awareness of the interplay of adumbrational qualities informs us how a designed architectural condition may be perceived by others. In particular, interior space offers a retreat from the vastness of the exterior. It brings us back to the intimate scale of oneself as an individual; a body within a body. Pallasmaa says, "A building is encountered; it is approached, confronted, related to one's body, moved through, utilized as a condition for other things. Architecture directs, scales, and frames actions, perceptions, and thoughts."[7] Multisensory adumbrations are, therefore, essential to our apprehension of physical, spatial things to

build up an image of them whether of an interior, exterior, or building in its entirety. For interior architecture students, the conditional and adumbrational perceptions of space need to be reinforced as ever-present and changeable in the deliberation of subtle architectural design.

Visible/Invisible

The world is not a "lake of nothingness" but a place to be explored and discovered in its depths and differences.[8] When our physical body is introduced to a scene; we are not only looking at objects from many adumbrational aspects as we move around them and as they reveal themselves to us. Our body becomes sensually engaged with the condition of the objects in space which reveal limitless possibilities in perceiving them.

Philosopher Jean-Luc Marion suggests that Martin Heidegger "legitimates the possibility of a phenomenology of the unapparent in general."[9] Heidegger's terminology of "showing itself" "from itself" is the announcement of subtle revelation. With all that is visible, there must be other things that remain invisible. Invisibility maintains potential, excitement, and expectation of our oneiric sensibility. The hidden becomes an equally valid phenomenal experience, as is the revealed. We understand that if something is hidden, it must have the potential to reveal itself and vice versa. Expectation, therefore, preempts revelation.

Spatial configuration determines how objects reveal themselves to be present and absent in relation to each other and to ourselves. If we consider adumbrations as revealing and alternating by hiding aspects of an object, then we can extrapolate this to the dialectics of the visible and the invisible, or presence and absence. Considered thus, absence can be regarded as the inverse of presence. Absence, then, is not nothingness or emptiness, but a place of portent, a space available for action, and a space which exists of and for itself. In interior architecture, space is definable yet exists as the presence of absence. Architects and designers make choices in design about spatiality: open space, closed space, surface space, material space, furniture space, object space, sound space, time space, or light and shadow space, for

example. Everything which is introduced or removed reconfigures and redefines spatiality.

Experiential learning

Experiential learning is the physical experience of making and doing which translates thought into action. Experiential learning reasserts the physicality of the teaching and learning experience through embodying design concepts in physical, project-based work. Although phenomenology offers a philosophical theory to encapsulate conceptual studio design, it is the experiential "making by doing" which reinforces the practice of architecture. The processes of active experimentation, risk-taking, and reflective observation combined with abstract and conceptual thought and research reinforce the mode of experiential learning. The preference is an intimate and experiential design studio which encourages the holistic engagement of body and mind as the integration of a psychosomatic partnership. Experiential learning is most effective for students who are strongly motivated to learn. Students must take the initiative to generate their own learning through active engagement with teachers, the environment, and the opportunities and facilities available to them.

The language we need to express our newfound awareness has to be poetic, elegant, sophisticated, and at times, raw and direct. Language becomes the necessary complement to drawing by adding the descriptive and poetic details that drawings merely allude to. Language provides nuance and eloquence to silent drawings and models by providing an appeal to a project. Exploratory and descriptive writing and speaking is a necessary adjunct to studio practice, as is the phenomenographic expression of our experience through movement, writing, drawing, making, photography, and performance.[10] Design studios can develop integrated exercises which reinforce a phenomenological and experiential approach to learning through exploration and discovery. These exercises can be applied at any year level as they establish the orientation of the studio early in the semester.

"Paper Play Things" is a first-year introductory exercise for students to work in pairs. The idea is to make an attachment for the body using only paper. Details, structural form, and strength have to be developed by understanding the qualities of the material itself. At the same time, the final piece of work has to have a simple conceptual or developmental reason that directs it. This is a way to start the semester with a few hours of fun and play while introducing an experiential learning exercise (Figure 21.1).

Photography can be used to concentrate vision on specific details when investigating objects. "Body" and "interior," as words, create two related foci for the students to explore, conceptualize, and revisualize the physical world through the immediacy of photography. When the photograph is printed and viewed, we often see many more aspects of the close environment than we did at the time of taking the photograph. This reinforces that we do not always see what we are looking at by realizing the importance of acute and subtle attention.

"Blind drawing" is a two-hour drawing exercise which happens in the first week of the semester to introduce the phenomenological approach to the studio. Many high-achieving students can be self-critical and intellectually judgmental of their creative abilities. Drawing by hand encourages students to let go of the perfection and accuracy which are so predetermined by CAD programs. Blind drawing disrupts the intellectual preconception and fear of "not getting it right" that many students face these days due to a lack of hand-drawing practice. The imperfection of viscerally responsive mark making offers the possibility of the unexpected, where a smudge could indicate a certain ephemeral or material quality that may lead to a journey of imagining. Drawing (or any mark making) mediated by the body is a phenomenographic process of transferring thought to paper. For this exercise, the students are blindfolded and directed to draw a variety of sensory perceptions of reality, not objects, but feelings of a thing. The drawings are made with soft charcoal on large sheets of paper. The students sit, stand, move about, crush the charcoal, or smash it into the paper, and draw with their hands (Figure 21.2). Life is a messy business; we do not live in a world of perfections and absolutes – it is one of errors and humorous

mistakes. The blind drawing exercise frees students from visually judging their drawing abilities. It acts as a significant turning point in the studio. Students use drawing to express their intuitions and ideas about design freely, in a direct and uncomplicated manner (Figure 21.3).

Figure 21.1 Paper Play Things. Students: Melike Sena Erden and Muhammed Ali Şişman. First Year Architecture Studio. Abdullah Gül University, Turkey. (2015)

Image credit: © Ross T. Smith

Architecture, says Botond Bognor, is a discipline which "guides and creates the person-environment relationship."[11] It is the design studio which has a predominant focus on the introduction to and the influence of this relationship during an architectural education. It is in this period of education, the actual experience of being in the design studio, during which the teacher has the opportunity to offer students a vast array of cross-disciplinary influences intellectually, physically, and socially. The challenge is to delimit the headlong rush into formalizing and rationalizing human experiences through the strict linearity of computer programs and their seductive operational values. There has become an addictive fascination with what happens on a screen to the neglect and detriment of hand drawing, model making, and other physical forms of material experimentation (exploration, the happy accident, and wonderment of the diverse influences) which could be used in the architectural design processes. There is less connection with the real and immediate as the digital and virtual take the central focal point of many students today. A reemergence of a phenomenological and experiential approach to learning, therefore, shifts students to focus on acts of the body existing in reality.

Figure 21.2 Blind Drawing. Student: Tarık Şengüleç. Workshop at Melikşah University, Turkey. (2015)

Image credit: © Ross T. Smith

Figure 21.3 Blind Drawing. Student: Fenina Acance. Master of Architecture Design Studio. University of Melbourne, Australia. (2012)

Image credit: © Ross T. Smith

Empowering students

The commitment of a teacher is to empower students to be freethinkers and questioners, to contribute meaningfully in the architecture of this rapidly changing world, and to be better equipped to tackle the difficult questions of our future environment. Architecture and interiority are often mediators of small problems. This is particularly evident in education and the progressive evolution of the design studio. A conceptual approach to design teaching is a persistent questioning of problems, ongoing research, resolution through reflective insights, and the iteration of ideas and progress. This attitude can

be applied to all design questions to solve problems and gain new awareness no matter the proposition.

Phenomenology expands students' thoughts theoretically and philosophically to enable them to examine their own perceptions and concepts in architecture. Teaching and learning interior architecture is not only about buildings; it is also about the innovation of our mind. It is one's creative imagination in response to how we live in this world that enables us to conceptualize and interpret the built environment to enhance our lives, not as an imaginary landscape, but as imagined propositions for living.

Greater sensitivity to our corporeal being reorients us to how we inhabit the interior environment in particular. As recorded in Italo Calvino's book *Invisible Cities*, Marco Polo said to Kublai Khan:

> Perhaps this garden exists only in the shadow of our lowered eyelids … But each time we half-close our eyes, in the midst of the din and the throng, we are allowed to withdraw here dressed in silk kimonos, to ponder what we are seeing and living, to draw conclusions, to contemplate from the distance… . It is our eyelids that separate … but we cannot know which is inside and which is outside.[12]

We comprehend space not only as a volume to inhabit but also as moments of physical and psychological presence. These are qualities which return us to our own body and mind, relinquishing us to drift into reverie and connect with our lived moments of intimacy.

Notes

1 Eugen Fink, cited in *The Merleau-Ponty Reader*, ed. Ted Toadvine and Leonard Lawlor (Evanston: Northwestern University Press, 2007), p. 61.

2 Juhani Pallasmaa, "Lived Space", in *Sensuous Minimalism*, ed. Fang Hai (China: China Architecture and Building Press, 2002), p. 188.

3 Maurice Merleau-Ponty, *The Merleau-Ponty Reader*, ed. Ted Toadvine and Leonard Lawlor (Evanston: Northwestern University Press, 2007), p. 63.

4 Gaston Bachelard, *The Poetics of Space* (Boston, MA: Beacon Press, 1994 [1958]), p. 134.

5 David Seamon, "Phenomenology, Place, Environment, and Architecture", in *Environmental and Architectural Phenomenology Newsletter* (Manhattan, KS: Kansas State University, Architecture Dept., Fall 2007).

6 David Cerbone, *Understanding Phenomenology* (Bucks: Acumen Publishing Ltd, 2006), p. 102.
Note: Cerbone gives a description of what Husserl referred to as "conditionals" of perception: "Consider the adumbrational visual presentation of a table. When I see the table I see it from one side, and from one angle… . Embedded in our perceptual experience is an elaborate network of conditionals that record possible, but not currently actual, perceptual experiences: if I turn my head, then I will see the corner of the table; if I reach out my hand, then I will feel the surface of the table; if I lean in closer, then I will smell the lemon oil I used to clean it yesterday. These conditionals, which Husserl calls relations of 'motivation', are essential to our experience being of or about material objects."

7 Juhani Pallasmaa, "Stairways of the Mind", in *Encounters*, ed. Peter MacKeith (Helsinki: Rakennustieto, 2005), p. 60.

8 Alphonso Lingis, Translator's Preface. Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. Claude Lefort and Alphonso Lingis (Evanston: Northwestern University Press, 1968), p. xliii.

9 Jean-Luc Marion, *The Visible and the Revealed*, trans. Christina M. Gschwandtner (New York: Fordham University Press, 2008), p. 7.

10 Note: Phenomenology is the apprehension and comprehension of phenomena, whereas phenomenography is the expression of that experience graphically or physically as documentation and outward expression of experiential learning. The former could be considered an internalized process whilst the latter an externalized manifestation of the phenomenological process. Phenomenography is the process of recording physically, as drawing and writing, making and building, the outcomes of learning by doing as things which materialized and can be seen, discussed, and reflected upon by the individual or others.

11 Botond Bognar, "A Phenomenological Approach to Architecture and Its Teaching in the Design Studio", in *Dwelling, Place and Environment: Towards a Phenomenology of Person and World*, ed. David Seamon and Robert Mugerauer (Dordrecht: Martinus Nijhoff, 1985), p. 183.

12 Italo Calvino, *Invisible Cities* (London: Vintage, 1997 [1972]), p. 103.

Chapter 22

Lines of Enquiry

Drawing out Sigmund Freud's study and consulting room

Ro Spankie

One of the defining differences between designing an interior, as opposed to the entire building that contains it, is the lack of control over the end product. Interiors are composed of movable elements, such as furniture and fittings, that the occupant arranges and rearranges according to their needs, tastes, and customs. The act of arranging allows the occupant to establish their identity and create a personal interior architecture which challenges the traditional understanding of the role of the designer and the concerns of form, function, and style. This chapter considers the motivations of the occupant as designer by considering how the founder of psychoanalysis, Sigmund Freud, arranged his study and consulting room.

Setting the scene

Sigmund Freud lived in Vienna for most of his life. From 1891 to 1938, he and his family lived on the second floor of Berggasse 19, an apartment block in Vienna's IX district. In 1908, Freud moved his psychoanalytic practice into two rooms adjoining the family apartment, which he furnished as a study and consulting room. Although his practice had a separate front door, he moved what was originally understood to be a clinical practice out of the surgery and into a domestic setting. For the next thirty years, it was in these two rooms that he saw patients, wrote his case histories and papers, and arranged his ever-growing collection of antique objects.

The first of the two rooms contained the therapist's couch and Freud's armchair. Perhaps the most iconic element of the arrangement, the couch, could be said to represent the practice of psychoanalysis. Given to him by a grateful patient in 1891, the couch is both a piece of domestic furniture and a nostalgic object, a reference to the days when Freud was still a medical doctor and used techniques such as hypnosis in the treatment of nervous disorders. Although the treatment shifted from the physical to the psychogenic, Freud continued to use the couch and placed his own position at its head out of the patient's view. This arrangement was intended to create an atmosphere conducive to free association; the patient lying with feet warmed by the stove in a perfusion of sensuous oriental rugs and throw pillows, "draped in that flying carpet for unconscious voyaging."[1] Freud, himself a disembodied voice or a listening ear, made his presence apparent by the fumes of an aromatic cigar as the patient's unconscious mind was revealed through memories, dreams, and everyday events. A photo from 1932, when he had his armchair, the couch, and its rugs moved to his summer residence at Hohe Warte just outside Vienna (so he could continue to treat patients during the summer months), provides proof that Freud considered this arrangement vital to his practice.[2]

The adjoining room, connected by open double doors, contained what Freud referred to as the "inner sanctum": his desk, his curiously shaped chair, and his library.[3] It was an inward-looking environment, with the desk placed adjacent to large windows, facing the double doors and the couch. One could describe the first room as housing the practice of psychoanalysis

and the second as framing its theory, the two activities visually connected and reflecting back on each other. As Freud returned to his desk to read, write, reflect, smoke, and answer correspondence, he was literally looking back on the previous scene. This period of stability came to an end with National Socialism. Freud's books were publicly burned in 1933, and in 1938 after the Nazis annexed Austria, Freud and his immediate family were forced to leave Vienna and make a new home in London.[4] This exile late in life – at age 82 – is why today the empty study and consulting room may be viewed in Vienna, but the contents of the rooms are found in London.

Provocation

In his introduction to the English translation of *The Interpretation of Dreams*, psychoanalyst James Strachey describes Sigmund Freud's life work as follows:

> First and foremost, Freud was the discoverer of the first instrument for the scientific examination of the human mind. Creative writers of genius had had fragmentary insight into mental processes, but no systematic method of investigation existed before Freud.[5] It was only gradually that he perfected the instrument, since it was only gradually that the difficulties in the way of such an investigation became apparent.[6]

Of course, the instrument Strachey describes was not an actual instrument, but rather a theory, method of investigation, and a treatment for psychological disorders. Analogy, however, is a useful tool to simplify complex ideas (one used by Freud himself) and focuses the reader's attention from the end product to the process of its design. The following pages offer a description of the interior where Freud treated patients and wrote his theories, suggesting that the arrangement of his consulting room and study were an integral part of the instrument.

Creating the psychoanalytic setting: practice

The transplanting of the interior from one architectural body to another means that following Freud's death in 1939, the original psychoanalytic setting is hard to locate. It is not simply a physical space, it is also a memory, a method, and a metaphor. Clues can be found in black-and-white photographs of the interior of Berggasse 19 taken in 1938 just before the family left Vienna, exhibited today in the empty rooms; in written descriptions by his patients (Hilda Doolittle, Sergei Pankejeff) and colleagues (Ernest Jones, Hans Sachs); and in the museum context of his final home at 20 Maresfield Gardens, London. What is apparent is that although each of these descriptions differs, in the act of re-creating, the interior key relationships are revealed – most notably the relationship of the analyst and patient, with the patient lying on the couch and the analyst sitting at the head out of sight.[7]

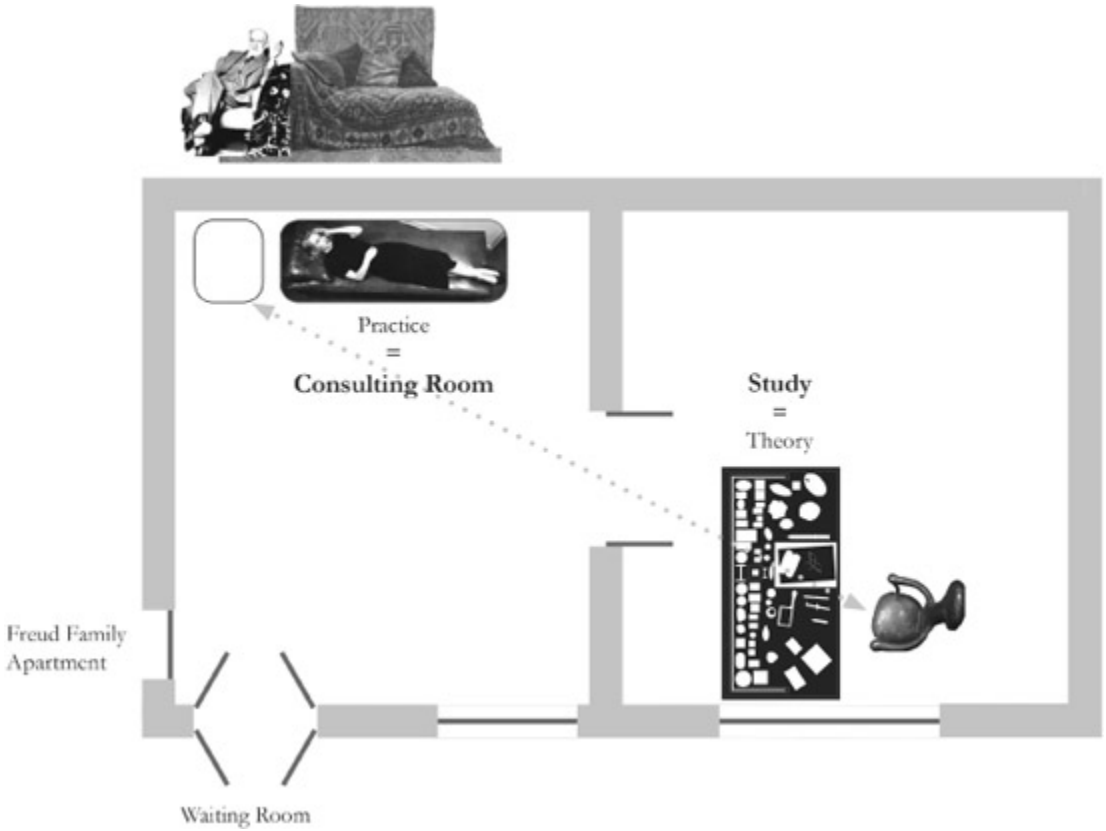

Figure 22.1 Diagrammatic room plan of Berggasse 19, Vienna, showing the Consulting Room with the patient lying on the couch, the analyst sitting at the head out of sight and the Study with the desk facing the couch that is viewed through a screen of objects

Image credit: author

Today, this arrangement is accepted psychoanalytic practice and is considered an essential component of the therapeutic process. It can also be understood as a functioning part of the "instrument" described by Strachey. The ability of the consulting room to be reconstructed in a variety of locations suggests that although it remains on the surface a typical fin de siècle Viennese interior, the arrangement can be more accurately described through the relationship of its parts rather than by conventional design drawings. Referring to contemporary discussions on topological thinking, Freud's interior architecture is capable of being compatible with a number of extensive qualities, such as distance, area, or volume – and one could also add style – while retaining its function.[8] For this reason, it can be picked up and recreated.

"Tools of thought, the kitchen utensils of his imagination": theory

There is another part of the arrangement that is less considered, yet was arguably a more vital part of the "instrument."[9] Freudian analysis requires the analyst to give their complete attention during the analytic hour; any notes are written up from memory after the session. In Freud's case, he positioned (in both Vienna and London) a large wooden desk where he could see the consulting couch, so that on returning to his desk at the end of the day he was literally reflecting back on his day's work, the visual connection aiding recall. Freud was not only writing up notes. What he heard at the head of the couch provided the raw material for the development of psychoanalysis as a whole. Over his lifetime he published

320 different books, articles, and essays, of which the majority were drafted in longhand on this desk.

Figure 22.2 Photograph of the desk at Berggasse 19, Vienna in 1938, by Edmund Engelman

Image credit: Freud Museum, London

Today, the desk is separated from the museum visitor by a rope. Curiously anonymous in comparison to the famous couch or the distinctively shaped chair, its surface is obscured by writing implements, smoking paraphernalia, and antique figurines that leave seemingly little space to write. It is this arrangement that remains in the mind rather than the desk itself. One could argue, however, that if the couch represents the method of treatment, it is the desk that tells us about Freud's writing. Considering the prodigious body of work that was written on its cluttered baize surface, it is of more significance than the couch.

Again, the ability to be relocated offers a clue. It is recorded that each summer the couch, the desk, and many of the objects on it were transported to the various family summer residences.[10] When Freud's possessions arrived in London in 1938, it was a matter of pride that the objects were arranged in the same order they had sat on the desk in Vienna.[11] The act of re-creation indicated the arrangement was in some way significant to Freud; however, the nature of this significance is harder to pin down than the arrangement of the consulting room. With none of the usual desk paraphernalia one might expect (such as family photographs, a calendar, or a telephone), the temptation is to treat the sixty-five objects – in particular the figurines – as a form of hieroglyph awaiting their Rosetta Stone. Hieroglyphs, like any system of writing, require a collectively understood set of symbols, and the associations are not so direct. There is no Oedipus on the desk and few of the Egyptian figures that make up the majority of the figurines are mentioned in Freud's writing.

Objects play an important role in psychoanalysis: the word is used to both describe representations of significant figures within the psyche, as in mother object or love object. Feelings for such figures are transferred onto actual objects, as in a transitional object or fetish object.[12] Functioning to both provide pleasure and ward off anxiety, such objects represent a complex emotional content to their owner as well as any formal representation. Research into the sixty-five objects on the desk reveals that they, too, hold multiple characteristics and associations. Their stories relate to both the character they assume and their role in Freud's life.[13] An Osiris figure represents the complex myth of the Egyptian god of the underworld and was also a gift from a friend to celebrate the completion of *Totem and Taboo* in 1913.[14] A Centaur, a hybrid figure – both man and beast – recalls the strange composite figures created in dreams, as well as the trip to Innsbruck where it was purchased.[15] Appealing to all the senses, we learn Freud was in the habit of absentmindedly stroking the smooth marble surface of the Baboon of Thoth in the same way he stroked his pet dogs. He was unable to write without a favorite pen, and as a lifelong smoker, the multiple ashtrays

on the desk would have been infused with the immensely pleasurable association of the smell and taste of cigars.[16]

Contemporary commentators also suggest the importance of the emotional content of the figures. Wilhelm Fliess, an otolaryngologist and contemporary of Freud, speculated that the little figures that faced Freud as he wrote provided him with an audience, "offer[ing] rest, refuge, and encouragement," acting as markers or signposts to his thoughts.[17] Or, as the American poet and patient of Freud, Hilda Doolittle put it, "his little statues and images helped stabilize the evanescent idea, or keep it from escaping altogether."[18] Thus, the desk is not functional in the way a designer might use the term, but rather it created what the English psychoanalyst Donald Winnicott has referred to as a "facilitating environment."[19] The arrangement of figures on his desk, plus certain writing implements and cigars, created a secure creative space that allowed Freud to think and to write.

James Strachey described how Sigmund Freud created and refined "the first instrument for the scientific examination of the human mind." This chapter has suggested at the same time that Freud also constructed an interior architecture that functioned as an integral part of that instrument. Through the act of relocating and recreating this interior architecture in summer residences and his final move to London, Freud revealed clues to the motivation and structure of the interior that are very different from the traditional design process, providing challenges in terms of representation.

In *The Interpretation of Dreams*, Freud also used the analogy of an instrument, not to describe his own work, but the workings of the human mind. He suggested, "we should picture the instrument which carries out our mental functions as resembling a compound microscope or photographic apparatus, or something of the kind."[20] Freud offers a curious abstract diagram to explain his analogy (Figure 22.3, top). Read from left to right, the diagram illustrates how perception is activated by experiences or stimuli indicated by the upward arrow; these are stored in the mind as a memory or memory trace. The memory trace is not only the content of perception, but also associations with it and links to other memories. These build up over a lifetime, represented by the dots, for the most part forgotten and part of the

subconscious. The subconscious also stores our wishes and fears, the oldest and most powerful of which derive from memory traces laid down in childhood when we are most impressionable. Responses to new stimuli or experiences can be motivated by these unconscious wishes and fears, brought into the conscious mind by the preconscious that also controls motor activity.

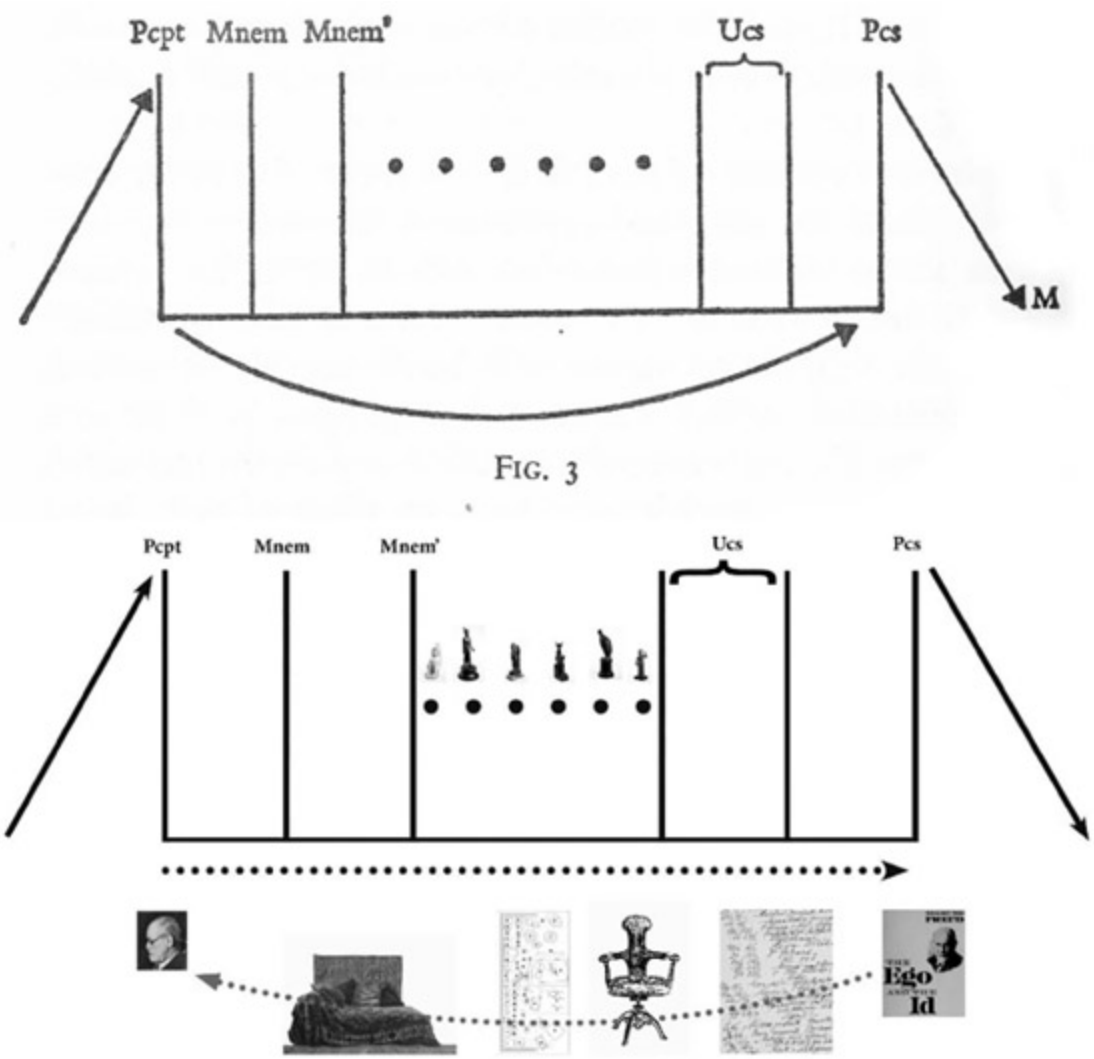

Figure 22.3 Top: Diagram from *The Interpretation of Dreams* where *Pcpt* = perception *Mnem* = memory *Ucs* = unconscious *Pcs* = Preconscious *M* = motor activity[21] Image out of copyright Bottom: Alternative description of Consulting Room and Study; the arrow indicating right that what Freud

heard at the end of the couch informed his writing, the arrow indicating left that ideas developed in his writing would direct his interests in particular aspects case histories

Image credit: author

Freud tells his reader that it is the time sequence of this psychic process that is important, rather than the spatial order; in dreams, the process described is reversed. Dreams begin as wishes (or fears) in the subconscious that work their way back through the memory traces before they surface as dream-images in the sleeping perceptual system. He continues:

> Analogies of this kind are only intended to assist us in our attempt to make the complications of mental functioning intelligible by dissecting function and assigning its different constituents to different component parts of the apparatus… . We are justified, in my view, in giving free reign to our speculations so long as we retain the coolness of our judgement and do not mistake the scaffolding for the building.[22]

Freud's diagram of the mind (Figure 22.3, bottom) is a model of how his interior functioned. Not directly representational, it refers to temporal sequence rather than spatial arrangement, separating out function instead of form. The ideas embodied in and associated with the furniture and fittings become the building blocks of Freud's imagination. Occupying this model over time gave Freud a scaffold against which to build his instrument.

Notes

1 *20 Maresfield Gardens: A Guide to the Freud Museum*, with a Preface by Marina Warner (London: Serpent's Tail, 1998), p. viii.

2 Photograph of Freud sitting at end of couch Hohe Warte 1933. (26* www.freud.org.uk/photo-library/detail/20025/)

3 The desk chair was made in 1930 by the architect Felix Augenfeld as a gift from his daughter Mathilde. Augenfeld wrote, "she explained SF had the habit of reading in a very uncomfortable body position. He was leaning in this chair, in some sort of diagonal position, one of his legs slung over the arm of the chair, the book held high and his head unsupported. The rather bizarre form of chair I designed is to be explained as an attempt to maintain this habitual posture and make it more comfortable." In *20 Maresfield Gardens: A Guide to the Freud Museum* (London: Serpent's Tail, 1998), p. 57.

4 "What progress we are making. In the Middle Ages they would have burned me; nowadays they are content with burning my books." Sigmund Freud cited in Ernest Jones, *Sigmund Freud: Life and Work, Vol. III: The Last Phase 1919–1939* (London: Hogarth Press, 1957), p. 194.

5 "The poets and philosophers before me discovered the unconscious; what I discovered was the scientific method by which the unconscious mind can be studied." Remark made by Freud to Professor Becker in Berlin 1928.

6 James Strachey, *Sigmund Freud: A Sketch of His Life and Ideas*, in the Introduction to *The Interpretation of Dreams* (London, Penguin Books, 1991), p. 20.

7 See Edmund Engelman's photographs in Edmund Engelman, *Sigmund Freud, Vienna IX, Berggasse 19* (Vienna: Verlag Christian Brandstätter, 1998); Sigmund Freud Museum, Vienna, www.freud-museum.at/; H.D. [i.e. Hilda Doolittle], *Tribute to Freud* (New York: Pantheon Books Inc., 1971); *The Wolf-Man and Sigmund Freud*, ed. Muriel Gardiner (London: Hogarth Press and the Institute of Psycho-Analysis, 1972); Ernest Jones, *Sigmund Freud: Life and Work*, in 3 vols (Vol. I: "The Young Freud 1856–1900"; Vol. II: "Years of Maturity 1901–1919"; Vol. III: "The Last Phase 1919–1939") (London: Hogarth Press, 1953 for Vol. I; 1967 for Vol. II; 1957 for Vol. III); and Hanns Sachs, *Freud: Master and Friend. A Subjective and Personal Psychological Portrait of the Great Psychiatrist* (London: Imago, 1945) and (Freeport, NY: Books for Libraries Press, 1970). After Freud's death in 1939, his daughter Anna continued to live at 20 Maresfield Gardens until her own death in 1982. During this time, the study and consulting room were left untouched. The house opened as the Freud Museum London in 1986. www.freud.org.uk/

8 The term topological thinking refers its use in the article "Deleuze and the Use of the Genetic Algorithm in Architecture," by Manuel DeLanda in *Designing for a Digital World*, ed. Neil Leach (Chichester: Wiley-Academy, 2002).

9 Marina Warner describing the antiquities in the collection in her preface to *20 Maresfield Gardens: A Guide to the Freud Museum* (London: Serpent's Tail, 1998), p. viii.

10 To escape the summer heat in Vienna each year, the Freud family would rent a summer villa in the surrounding countryside. In order that Freud could continue to work and to see patients, the couch and many of his possessions would be transported there. Martha Freud writing to her daughter-in-law Lucie describes how in the morning Freud had an analytical hour in Berggasse 19: in the afternoon when he moved out to the villa at Grinzing, he was able to sit at the desk and feel at home "all his pictures and also the majority of his antiquities were in their places." Letter to Lucie Freud 8 May 1934 in Michael Molnar, *The Diary of Sigmund Freud 1929–1939: A Chronicle of Events in the Last Decade* (London: Hogarth Press, 1992), p. 58.

11 Ernest Jones, *Sigmund Freud: Life and Work, Vol. III: "The Last Phase 1919–1939"* (London: Hogarth Press, 1957), p. 248.

12 An example of a transitional object might be a teddy bear. See Donald W. Winnicott, *Playing and Reality* (London: Tavistock Publications, 1967). An example of a fetish object might be a women's stocking. See Sigmund Freud, Fetishism 1927, in SE Vol. XVIII, pp. 152–157.

13 For a description of each of the objects on the desk see Ro Spankie, *Sigmund Freud's Desk an Anecdoted Guide* (London: The Freud Museum London, 2015).

14 Freud's biographer, the Welsh psychoanalyst, Ernest Jones, described how some of Freud's followers celebrated the completion of *Totem and Taboo* (1913) by arranging a dinner for him in the Prater, a pleasure garden in Vienna. On this occasion, Loe Kann (Jones's common-law wife) gave Freud, "an Egyptian figurine which he adopted as his totem" and kept in front of his plate for the evening. Jones, *Sigmund Freud: Life and Work*, Vol. II, p. 398.

15 Spankie, *Sigmund Freud's Desk: An Anecdoted Guide*, p. 30.

16 Ibid., p. 48; "If you see Sachs, remind him to bring me the fountain pen. My good one is broken, and I can hardly write." Freud Letter to Anna 19 September 1919 in Spankie, *Sigmund Freud's Desk an Anecdoted Guide*, p. 158; "That Freud was a heavy smoker is generally known. His consumption averaged twenty cigars a day. That it might be called rather an addiction than a habit was shown by the extent to which he suffered when deprived of the opportunity to smoke." Ernest Jones, *Sigmund Freud: Life and Work, Vol. II: Years of Maturity 1901–1919* (London: Hogarth Press, 1967), p. 430.

17 *The Complete Letters of Sigmund Freud to Wilhelm Fliess 1887–1904*, ed. Jeffrey Moussaieff Masson (Cambridge, MA: The Belknap Press of Harvard University Press, 1985), p. xvii.

18 H.D. [i.e. Hilda Doolittle], *Tribute to Freud* (New York: Pantheon Books Inc., 2012), p. 175.

19 Donald W. Winnicott, *Playing and Reality* (London: Tavistock Publications, 1967), p. 82.

20 Sigmund Freud, *The Interpretation of Dreams* (London: Penguin, 1991), p. 684.

21 Ibid., p. 690.

22 Ibid., p. 685.

Chapter 23

On technological limits

Clare Olsen

Design, by definition, involves parameters that delineate the notion of making something for some purpose. In interior architecture, project goals define a scope of work that is further informed by the boundary conditions of site, contextual surroundings, code requirements, and budgetary restrictions. These bounding (and sometimes binding) conditions of each project create explicit limits to production. It is through artful understanding of these limits that design becomes stronger and more real.

Project constraints are not always apparent. Requiring both time and expertise, architects and designers need to know how to define them, as well as when and how to interrogate them. Every project involves research and analysis to demystify the complexities of the design parameters. Once these are understood, innovation and novelty arise through experimentation and sometimes risk. As Michael Speaks explains in *Design Intelligence*, "If architecture is to remain relevant it must also adapt and learn to see innovation where it arises – often on the periphery or outside the limits of its own body."[1] In pursuit of cultural relevance and disciplinary contribution, designers must reach beyond the limits that define every architectural project.

No matter the site or budget, every design project is defined by the boundaries of the discipline, historically inscribed by the profession, the academy, the tools of production, and the materials of construction. In his essay, "Transdisciplinarity," Mark Linder describes the need for disciplinary identity without the associated posturing and siloing, and that working at the "border" of the discipline produces new knowledge and an expansion of disciplinary expertise. Whether looking outside the discipline through cross-disciplinary collaboration or borrowing tools, discovering new ways of seeing through explorations "outside" can inform new methods of working. Linder also asserts that it is at the limits "where we become most aware and in need of the tools, techniques, and technologies of the discipline."[2] Advances arise by harnessing disciplinary expertise associated with the technologies of production to push against disciplinary boundaries.

Throughout history, technological innovations have defined major transformations in the profession. In the modern period, new materials and methods of manufacturing born from the Industrial Revolution contributed to the development of a new International Style. Similarly, since the propagation of computational design and production methods since the 1990s, we have witnessed a transformation in both working methods and the work produced. One of the early pioneers of computational design, Greg Lynn, introduced computation and digital fabrication into his academic and professional studios. Lynn mined the design and production methods of automobile and animation industries to inform new working methods and formal typologies. Disciples and allies following similar practices proliferated those technologies, thereby expanding the normative set of disciplinary tools. The effects of the digital turn are evident in all aspects of interior architecture, from design tactics to construction techniques.

Interior architectures, in particular, provide dynamic sites for technological experimentation. Antoine Picon acknowledges, "digital technology has allowed [texture] to become a more autonomous dimension, present from the start in the design process and imbued with a definite ornamental character."[3] Over the last few decades, a reinvigorated interest in ornament has led to a growing body of digital design research, which has

energized discussions about the sensorial experience of interior spaces. In *Kissing Architecture*, Sylvia Lavin elaborates:

> Architecture today need not be just that which you bump up against when you try to look at something else nor a monument culturally framed and rendered visible by its own importance. Architecture's new confounds are not just making buildings visible, but are encouraging them to find ways to make perception enter the realm of experience rather than vision, to make images that produce material impressions, to make experience that is vivid.[4]

The atmosphere and special effects of the built environment are particularly pertinent for the immersive spaces of interior architecture. In the same way that Pier Vittorio Aureli describes exterior facades as mediating "between private property and public space," interior surfaces mediate between the private collective (program functions) and the private individual or sensorial experience.[5] The texture or smoothness of the surfaces, coolness or warmth of materials, and dance of light delineate the emotive and sensorial qualities within a space. Jacques Derrida describes, "To touch is to touch a limit, a surface, a border, an outline," emphasizing the tactile qualities of the boundary between architecture proper and the affective experience within it, what Gilles Deleuze refers to as the tactile-optical experience.[6] This vibrant border which defines the interior condition is celebrated by Lavin:

> The interior is quasi-autonomous – it relies on and is even often isomorphic with architecture, but remains distinct from architecture's identification with building. As a result, the interior is uniquely free to seek out provisionality, changefulness, and to provide architecture with a site of experimentation. The interior coordinates surfaces that are in sufficient proximity with one another that they amplify each other's effects.[7]

As Lavin suggests, the amplification provided through interior surface effects can offer rich sensorial experiences. Furthermore, as sites for transformation, interiors lend well to design experimentation.

One of the clearest channels through which designers test new ideas is through the technologies of production, defined as the software and hardware used in the design and construction processes. Although broad ranging, as technologies are introduced into the profession, their use produces novelty. As technologies become embedded within the culture of the discipline, innovations require a deeper level of technological expertise. By building on disciplinary knowledge, designers can question the limits of production to produce new forms and spatial experiences. Although too broad in scope to flesh out entirely, a few experiments focused on technological limits provide inspiring examples.

Questioning machine limits

Machines are generally understood as finite tools – they do what they do – but within the context of design where norms are questioned, machines can be a productive subject for experimentation. This holds true for computer numerically controlled (CNC) machines, which were co-opted from manufacturing industries and are now entrenched in normative modes of design and construction. Today, designers have fewer limits to the design and construction of complex, customized interior environments. CNC machine size limitations lend well to the interior scale. Tooled materials are usually easy to carry and within a dimension similar to standard, off-the-shelf building materials and furniture. This holds true for machines commonly found in small fabrication shops where CNC mills are usually around four feet by eight feet, laser cutters less than four feet wide, and 3D printers usually have a buildable area smaller than one cubic foot. Of course, limitations exist for every machine pertaining to the geometries and materials that are possible to cut, mill, or print. Aside from scale, 3D printers have the fewest limitations on the types of forms that can be produced. As an additive process, printing machines are superbly capable of

manufacturing fantastically intricate objects, yet there have been few examples of building-scale use of 3D prints, due to the expense of printing standard materials like plastics, metals, and powders, which can cost upwards of US$75 per pound, and the more durable, the more costly.[8] This circumstance renders 3D printing largely unaffordable for interior construction. If the cost deterrents can be overcome, however, 3D printing holds tremendous potential for interior architecture, where a renewed interest in ornament and tactility can be manufactured at an approachable scale.

Recognizing the cost-prohibitive limits of 3D printing industry-standard materials for interior architecture, Ron Rael and Virginia San Fratello, co-founders of Rael San Fratello, created an offshoot of their Oakland-based practice called Emerging Objects, defined as a "MAKE-tank" focused on design and fabrication research through 3D printing. By hacking additive printing machines, they developed the wizardry to print materials formerly unimaginable within the realm of building construction. Through years of playful experimentation and testing, the team developed techniques and formulas to print materials such as salt, sand, and sawdust. Although one might associate salt with impermanence, the prints are "made of a combination of salt harvested from the San Francisco Bay and glue, a 'salty glue', which makes an ideal 3D printing material; one that is strong, waterproof, lightweight, translucent, and inexpensive"[9] (Figure 23.1). By mining sustainable materials, and sometimes by-products of other manufacturing processes, Emerging Objects innovates building modules that are highly intricate, eco-conscious, and much more affordable than standard rapid prototyping materials.

Figure 23.1 Emerging Objects, Designed by Ronald Rael, Virginia San Fratello, and Seong Koo Lee, *Saltygloo*, 2013, salt, single tile

Image credit: Emerging Objects

The temporal quality and experimentation that 3D printing affords lends well to the changeability of interiors described by Lavin. San Fratello, who teaches interior architecture, speaks of the influences of Henry van de Velde on their work and the desire to integrate ornament into interior environments. "I think architecture is still about customization and uniqueness. Architecture still responds to unique sites and contexts, and 3D printing actually facilitates the role of customization in architecture, and the number of issues we can respond to as designers."[10] Employing the unique capabilities of 3D printers to manufacture highly complex forms, Rael and San Fratello's research has opened new opportunities in pursuit of intricate interior environments. Their "Saltygloo," for example, exhibited at the

Museum of Craft and Design in San Francisco, demonstrated the performance of the salt modules at the scale of a room. The translucent shell, embedded with texture and tiny apertures, created a soft disco effect and ephemeral atmosphere. Through this research and body of work, Emerging Objects has demonstrated that questioning the limits of machines can enable new potentialities for interior design and spatial experiences.

Questioning structural limits

Revelations advancing concrete, iron, and glass transformed the building industry during the Industrial Revolution. Similarly, new materials and technologies continually provide fertile ground for architectural innovation. Glass fiber–reinforced gypsum, for example, allowed Zaha Hadid Architects to more easily create the illusion of a seamless, fluid interior with embedded lighting and acoustical performance for the Guangzhou Opera House in China. Driven by efficiency and optimization goals, material scientists, designers, and engineers working toward ever thinner, yet stronger, materials have enabled greater lightness and ephemerality in interior architecture.

These seemingly magical formal and structural explorations have been made possible not only through new materials, but also by increasingly sophisticated structural analysis software. The development of finite element modeling (FEM) parallels CAM software that emerged from the development of supercomputers in the 1950s. These room-sized machines provided computational power initially harvested by the aerospace and military industries. As computer technologies proliferated and became more refined, market demands prompted developments in FEM software for increased capabilities and easier operation, permitting designers to gain a better understanding of material performance and risk associated with complex forms.

Although every built project has some degree of associated risk, especially in high seismic zones, there is a natural aversion to profound risk in the building industry associated with reliance on codes, analyses, mock-

ups, and testing. As a counterpoint and informant for structuring large-scale interiors, installation projects can provide low-risk opportunities to expand the limits of structural performance. Several commissions at Southern California Institute of Architecture (SCI-Arc) have been particularly notable in demonstrating the potential for structural logics to inform sensorial interiors.

In their 2008 *Voussoir Cloud* installation, Iwamoto Scott used digital form-finding to create a hanging chain model to produce efficient parabolic geometries that, when virtually flipped, created vaulted forms in pure compression. The design team, which included Buro Happold engineers, scripted a tessellation pattern with varying sizes and densities based on structural strength requirements fabricated by laser cutting and folding paper-thin wood veneer into modules, or voussoirs, held partly in tension and partly through mechanical fasteners. The resulting installation is perceived as continuous, yet differentiated, stable, and also incredibly light.

Similarly, Tom Wiscombe, also working with Buro Happold and students in the Materials Lab Program at SCI-Arc, experimented with structural gymnastics for the *Cantilever* project completed in 2011. The team used ANSYS analysis software to test the limits of composite materials for the construction of a fluid, pleated form assembled through molding and welding rather than mechanical fasteners. The translucent system was "tattooed" with vectors of two-inch-wide reinforcing fibers, producing both structural support and an aesthetic effect of networked continuity. The biomorphic form hovers above a heavily traveled corridor in the school, evoking a sense of weight with its scale, which is counterbalanced by both its translucency and impossibly long cantilever.

Similarly playing with an idea of structural magic, Heather Roberge and her practice Murmur installed *En Pointe* in the SCI-Arc Gallery. Based on research developed through a year-long graduate-level studio Roberge taught at UCLA, titled "The Genealogy of the Column," Roberge designed *En Pointe* as both a celebration and critique of structural form-finding projects, closing a gap between the impossible thinness of the computer model and the reality of constructing actual lightness. Since each

column is asymmetrical and diminishes at the base, no single module would stand alone; however, each column stands as a cluster "en pointe" through the use of folded triangulated geometries and material innovations using aluminum sheets, composites, epoxies, and tapes. The column forms were further refined through structural analyses software. Without reliance on the nearby walls, only on each other, digital models of seemingly stable clusters were gravity-loaded in digital physics simulations for analysis. Through an iterative design and testing process, the team arrived at the assembly, which is the thinnest it can possibly be, which is stable without appearing static (Figure 23.2).

The *En Pointe* installation interrogates the limits of structural risk using a careful balance between form and materials, realized through digital and physical experimentation. Murmur designed a co-dependent column system, thereby developing a new typology, the column cluster. Drawing inspiration from the dramatically soaring Hypostyle Hall, *En Pointe* is similarly sublime – despite its small scale. The folded column network of the installation has tremendous potential for interior architectural projects seeking structural lightness and an ephemeral definition of space. *En Pointe* demonstrates that questioning the limits of structure can provide new tactics to achieve interiors offering atmospheric lightness (Figure 23.3).

Asserting production limits

This discussion has described a few of the positive ways in which interrogating technological limits can be a springboard for advancing the field of interior architecture. When looking through a notably critical lens on this topic, some might argue that certain technological limits need greater fortification rather than expansion. Critics of certain contemporary practices may substantiate this call simply by virtue of taste; the technological innovations discussed here do not appeal to all audiences. Regardless of position, however, there is little doubt that new working methods in the digital age have produced both positive and negative ramifications for the work culture of the architectural professions.

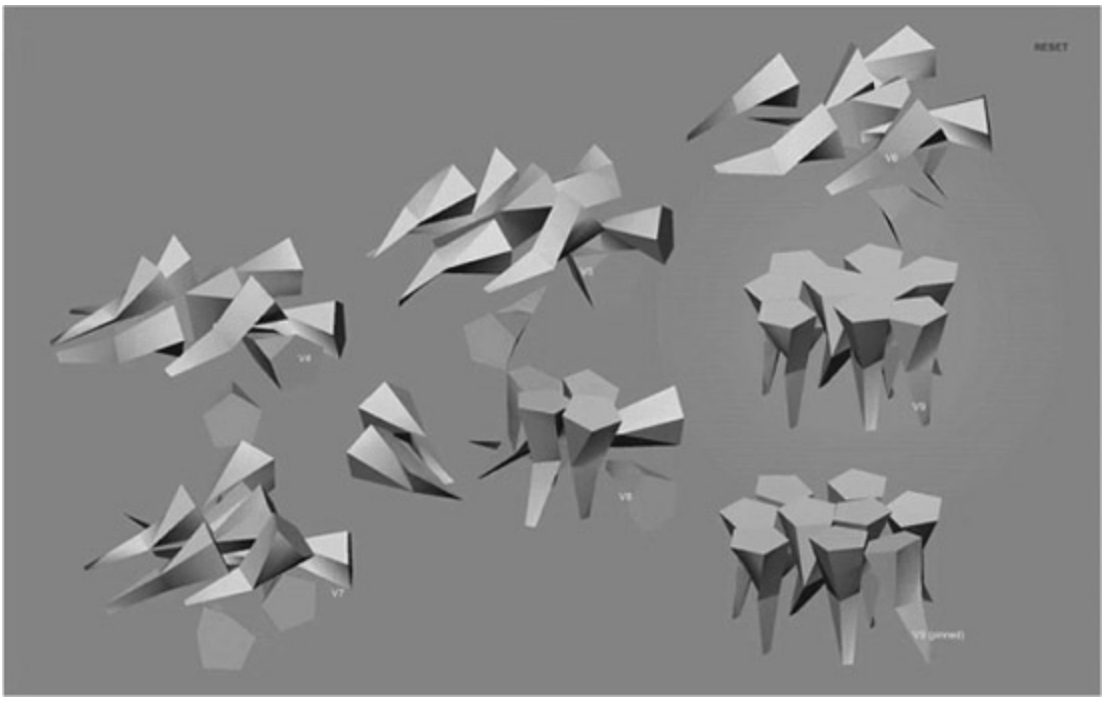

Figure 23.2 Murmur, Designed by Heather Roberge, *En Pointe* (2015)

Image credit: Murmur

First and foremost, the transformation in working methods has greatly impacted notions of autonomy in the practice. Part of this shift, created by increased access to computer-aided manufacturing, was discussed by William Massie in *Remaking in a Post-Processed Culture*. He asserted, "The ability for direct dialogue between virtual and actual provides a substantial increase in artistic autonomy. With the removal of traditionally mitigating forces in the logistics of architectural production, the onus of accountability received by the architect becomes greater."[11] In this sense, the complexities associated with the autonomy afforded by digital technologies also impose increased burdens on architects and designers. The ability to create numerous ideas and test them through digital manufacturing has redefined what it means to design iteratively: more versions can be made more quickly, but assessing multiple versions to arrive at the "right" solution also necessitates testing and analysis. Of course, this making and testing

feedback loop requires time, potentially impacting designers' work life and profit margins.

A more specific example of a call for limits, which some critics might affirm in the context of a discussion on iterations, is a reaction to the infinite variations that are afforded by parametric modeling. Computers are excellent tools for optimization and efficiency, and they are also superb at generating excess. Although parametric modeling enables the qualities of continuity and differentiation, which are associated with the contemporary condition, the variables plugged into the algorithms, animations, and scripts of parametric models facilitate an endless number of results, begging the question, is more really more?[12] In each project, architects and designers make decisions about design extents. Advocates for limiting excess might look to small-scale installations, which could serve as a model for the assertion of boundaries as a way to create emotive interior interventions.

Two memorable objects created for the *Matters of Sensation* exhibition at Artist's Space in New York reveal the powerful and artful quality of juxtaposing highly articulated, detail-rich surfaces against a blank wall. Murmur's vacuum-formed aluminum *Bioform* and the CNC-milled high-density foam of Ruy-Klein's *Klex 1* both have an aura of objectness, making them tactile and corporeal. The modules that compose *Bioform* are the size of a hand, making it more understandable, relatable, and biomorphic. Similarly, *Klex 1*'s framed ornament could be imagined as either remaining as a singular exquisite object or becoming a bordering element at the seams of a room. Although the context of the exhibition itself required finite and refined boundaries, these sculptures provide exquisite examples of the beauty and surprise that can be achieved by limiting the parametric project.

Figure 23.3 Murmur, Designed by Heather Roberge, *En Pointe*, 2015, aluminum, SCI-Arc Gallery, Los Angeles, CA

Image credit: Joshua White photography

As *Bioform* and *Klex 1* demonstrate, imposing limits on the parametric form, emphasizing the blankness of the wall that surrounds it, celebrates the dialog between an articulated object and its context as a source for sensuality in interior spaces. The dynamic qualities of this approach to designing interiors can be better explained by reading John Dewey's writings about the aesthetic experience. According to Dewey, the continuity of moving through a space creates "an experience" and it is through "pauses, places of rest" from "something to something" that make experiences more notable. "As one part leads into another, and as one part carries on what went before, each gains distinctness in itself. The enduring whole is diversified by successive phases that are emphases of its varied colors." Following Dewey in celebrating the boundaries and blankness

between things, an emphasis on spatial design can provide more notable sensorial experiences.[13]

By questioning disciplinary, manufacturing, or structural limits while acknowledging the ramifications of overproduction, designers can find rich inspiration for the emerging practice of interior architecture. Without a doubt, the development of technological expertise enhances awareness and working knowledge while catalyzing boundary-pushing design. This challenges designers to seek special awareness in each project, through either research or collaboration. Better understanding and interrogation of limits will enable opportunities to create new and powerful aesthetic experiences in interiors.

Notes

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3 Antoine Picon, *Ornament: The Politics of Architecture and Subjectivity* (West Sussex: John Wiley & Sons, 2013), p. 27.

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7 Lavin, *Kissing Architecture*, p. 64.

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11 William Massie, "Remaking in a Post-Processed Culture", *Architectural Design* 72, no. 5 (September/October 2002): 58.

12 In *The Function of Ornament*, Farshid Moussavi declares, "Differentiation is a contemporary effect," in Farshid Moussavi, "The Function of Ornament", *Introduction: The Function of Ornament*, ed. Farshid Moussavi and Michael Kubo (Barcelona: Actar, 2006), p. 12.

13 John Dewey, *Art as Experience* (New York: Minton, Balch, 1934), p. 206.

Chapter 24

Salvador Dalí's interiors with Heraclitus's concealment

Simon Weir

Salvador Dalí's sweeping surrealist essay, *The Conquest of the Irrational*, was a summation of his theoretical and representational aims during his engagement with André Breton's Parisian Surrealist movement.[1] The fourth and final section of the essay was curiously subtitled "The Tears of Heraclitus." Living in Ionia (now part of Turkey) some 2,500 years ago, Heraclitus produced a written legacy that has long been little more than a collection of aphorisms, fragments, and second-hand quotations; nonetheless, they have been the subject of perennial study. Around 45 BCE, the great Latin orator and statesman Marcus Tullius Cicero described him as obscure by inserting a Greek word into his Latin text, *σκοτεινός* (dark).[2]

The Heraclitian aphorism that Dalí selected for this essay was φύσις κρύπτεσθαι φιλεῖ, which may be translated as, "it pleases nature to conceal itself," or "nature loves to hide."[3] By 1935, when Dalí completed *The Conquest of the Irrational*, this fragment had already been the subject of long contemplation, appearing in five of his previously published essays.[4] Dalí had referred to the aphorism in the opening sentence of one of his

earliest published writings, a 1927 essay for a small Catalan journal, *L'Amic de les Arts*, during the early days of his interest in surrealism.[5] Dalí's essay, titled "Saint Sebastian," began with the apt subheading "Irony," a foundational step toward the complex representational ironies of surrealism.[6] After the opening Heraclitian quotation, Dalí reflected on the interpretation given to this fragment by Alberto Savinio eight years earlier. Alberto Savinio was the assumed name of Andrea Francesco Alberto di Chirico, younger brother of painter Giorgio di Chirico, both of whom had considerable influence on the development of surrealist painting and the surrealist object.

In 1919, Savinio explored this aphorism in terms of irony and interpreted it as describing two aspects of the relationship between man and nature. Savinio insisted that irony was the most important theoretical principle in painting. Irony, he explained, is the ethical consequence of nature's nudity. This leads artists to develop modes of morality that conceal the "terribly clear appearances" they perceive.[7] This morality takes the form of distortions in their representations of nature's appearance. Savinio added a second interpretation of the aphorism: nature seeks to hide from herself through "self-directed modesty."[8] This suggests that in reality, not only in representation, natural objects do not reveal themselves through their appearance. Artists, therefore (and especially painters, because they deal exclusively with the visual), must reveal through appearance alone that things are not as they appear. Thus, the deeper aim of metaphysical art was to use representative painting to reveal what is hidden by appearance.

Savinio's musings appear to have had deep resonance for Dalí. Although he mentioned Savinio only once, he continued to write about Heraclitus's aphorism in precisely these terms. In another essay for *L'Amic de les Arts* published later that year, as Dalí was deepening his experiments in surrealist technique, he explained that this aphorism may reveal "an elevated concept of irony [that] is the equivalent of naked reality … [and] that may be seen at present in my works."[9] This irony is clearly not the relatively simple explanation of a painter's distortions of representation, but rather nature's self-concealment and the necessity of ironic representation.

This theoretical premise, natural and inevitable concealment, is a key theme in the early development of Dalí's surrealist objects and images. In this chapter, some of Dalí's surrealist objects developed the early 1930s, and later architectural ideas will be interpreted through this premise of concealment and the surrealist preoccupation with the displacement of desire.

Desire for surrealist objects

In his 1932 essay *The Object as Revealed in Surrealist Experiment*, Dalí categorized surrealist objects based on the desire that the object generates: "what matters is the way in which the experiments revealed the desire for the object, the tangible object."[10] This desire is measured effectively by the kind of action that the desired object induces, which Dalí separated into four increasing levels of engagement: first, when we take no part in them; second, the object acts upon our contemplation; third, the object operates symbolically and can be acted upon; and finally, the objects brings about a desire to be eaten. Bridging the stages between contemplation and action, Dalí referenced the concealment in Man Ray's disturbing photographs of figures wrapped up and tied with string. These images suggested the preparation of more wrapped objects, as they produced the urge to explore them tactilely, so that one might identify through touch what their wrappings concealed.

The first example Dalí gives of a manifestation of the desire to consume surrealist objects is:

> the appearance of eatables in the first surrealist things painted by di Chirico – crescents, macaroons, and biscuits finding a place beside T-squares and other utensils not to be catalogued … [and] artichokes or bananas which, thanks to the exceptional cooperation of circumstances, form on their own, and without any apparent modification, actual surrealist articles.[11] (Figure 24.1)

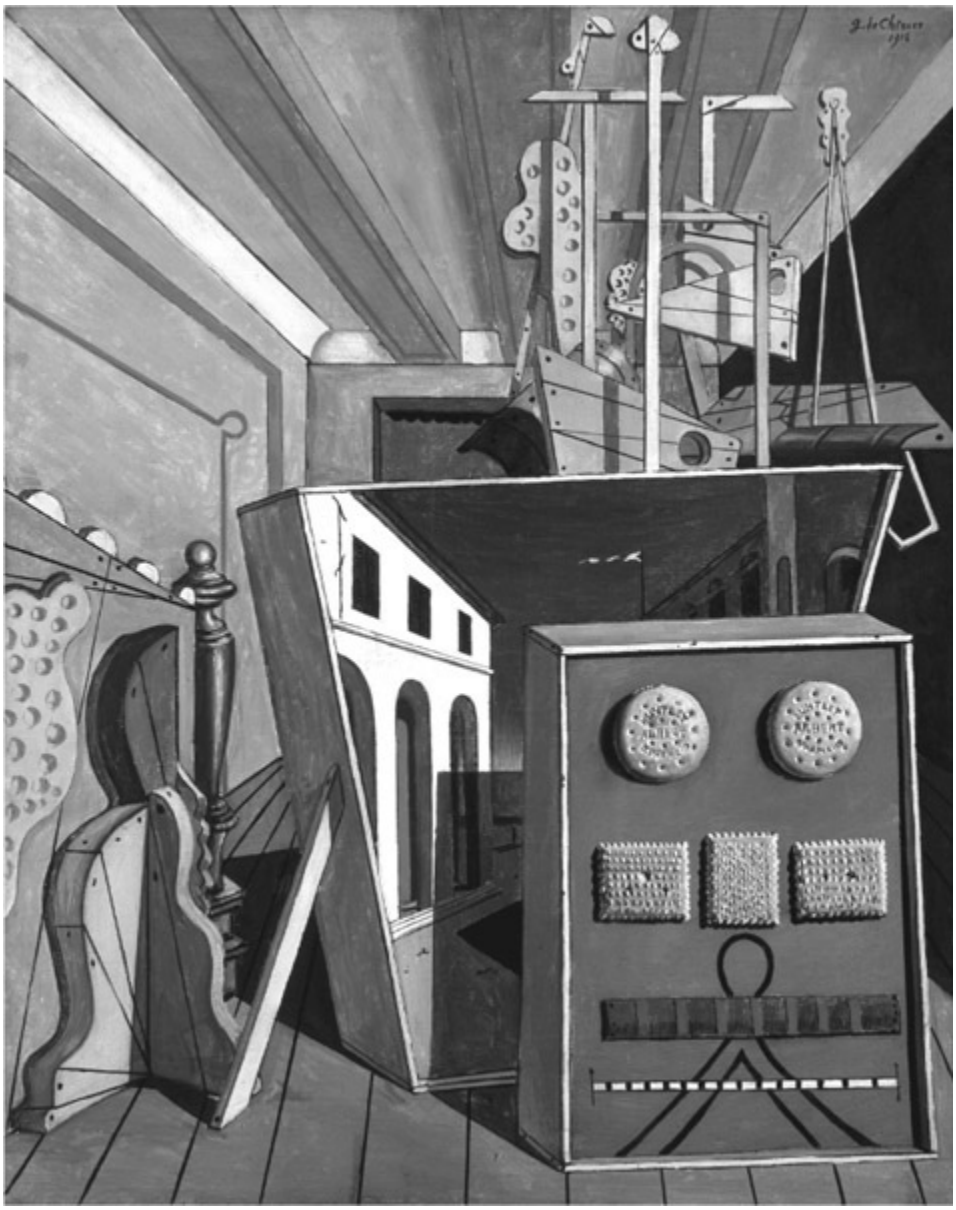

Figure 24.1 "Metaphysical Interior with Biscuits (Interno metafisico con biscotti)," oil on canvas by Giorgio di Chirico, 1916. Photographed by Hickey-Robertson, Houston. (Courtesy of The Menil Collection, Houston)

Image credit: © Giorgio di Chirico/SIAE; licensed by Viscopy (2015)

This insistent desire to engage progressively more and more with the object is symptomatic of a general urge to unify oneself with the desired,

to form a whole with it, to dissolve the separation between the desired and desirer; "their existence brings us to want to eat them."[12]

Edible decor

Developing the principle that the most desirable of surreal objects generate a real and visceral hunger in his 1932 essay, *Psychoatmospheric-Anamorphic Objects*, Dalí described what are ostensibly practical problems of production: "It was a question of knowing how one could end up making, for example, a table edible, to satisfy at least partially the imperious desires of 'cannibalism of objects.'"[13] This was not a passing caprice. A year later, Dalí referred to a design of "the well-known and much desired table that is half made of stone, half of poached egg" and described its triumphal moment as cooling slowly in the late afternoon breeze while suspended between two poplar trees in the forest of Ermenonville.[14]

A decade later, Dalí brought together two ideas in his autobiography without an explanation of their association. First, he described the period of experiments with the surrealist object as one governed by a growing irrational hunger, which ultimately revealed itself as a desire to eat everything. Having stated this, he then gave the manufacturing recipe of the edible table:

> The first thing to do is make a mold of a table out of celluloid (preferably a Louis XIV table), exactly as if one were going to make a cast. Instead of pouring plaster into the mold, one pours the necessary quantity of white of eggs. Then one dips the whole into a bath of hot water, and as soon as the white begins to harden one introduces the yolks into the mass of the whites by means of tubes. Once the whole has hardened, the celluloid mold can be broken and be replaced by a coating of pulverized egg shell mixed with a resinous or sticky substance. Finally this surface can be polished with a ground pumice until it acquires the texture of egg shell.[15]

Dalí then moved on to a potentially more beautiful and disturbing proposal for a replica of the famous ancient Greek sculpture, the *Venus de Milo*, similarly made of eggs, explaining, "you would then be able to break the egg shell of the Venus… [dipping] a blue silver spoon into one of the breasts of the Venus, exposing the egg yolk of her insides to the light of the setting sun."[16]

The same combination of rigid structural exoskeleton and soft nutritious interior is also found in another sculptural project, the *Lobster Telephone*, of which Dalí created several working versions in 1936 for collector Edward James (Figure 24.2). These sculptural projects can be explained in terms of the over-enlarged desire to consume objects and Savinio's interpretations of Heraclitus's aphorism.

The presumed edibility of these sculptures, prompted by their appearances, promises nutritive fulfillment, yet the actual object of nutrition (the soft interior) is concealed. When looking at an egg or lobster with desire for the object, only the elegant concealing shell is visible; vision is displaced from the true object of desire to that which conceals it. The externally perceived object, the apparent object of the desire, will be destroyed and abandoned during consumption. As the shells are cracked and torn apart, the fact of the displacement is made, as Savinio put it, "terribly clear."

Averting this terrible clarity, the lobster of the *Lobster Telephone* is not consumed. Indeed, it cannot be since the lobster is only a painted replica and the eggshell table and Venus were never produced. Allowing the shells to endure unbroken, like leaving di Chirico's painted biscuits untouched, maintains the illusion that the desired object is its apparent external form, neither a visual and libidinal displacement nor a concealment. Thus, the shells are able to present themselves as desirable objects without the violent scrutiny of a terribly revealing consumption. The operative moral position, which Savinio described as a response to nature's nudity, is abstinence.

As Dalí noted, "it was a question of knowing how." The surrealist act was the invention of the method to produce such objects, not the preparation and eating of the objects themselves. Surrealism, as André

Breton had defined it, was a method by which one revealed the true nature of thought, and the paranoiac-critical method that Dalí used in designing these objects was defined as the generation of knowledge.[17] In these cases, the knowledge is a dissimulated presentation that conceals the objects' nature. Dalí's objects do not reveal themselves and what is hidden by appearance, but reproduce nature's concealment. They arouse hunger and affirm themselves as desirable objects, but they cannot satisfy the desires they provoke.

Figure 24.2 "Lobster Telephone," painted plaster, telephone, by Salvador Dalí, 1936. National Gallery of Australia, Canberra. Purchased 1994.

Image credit: © Salvador Dalí, Fundació Gala-Salvador Dalí/VEGAP; licensed by Viscopy (2015)

The concealment of the exterior

As clarified by the theorization of Dalí's surrealist decor, the artistic materialization of the premise of natural concealment is compromised by

any action that reveals the concealment. This is because the objects themselves are mere synecdoche for the grand desire to eat everything, and this desire must be resisted morally through a carefully positioned abstinence – an abstinence that is only feigned. The interiors of these objects, like the reality of this desired "everything," are unambiguously implied, but only imagined. It is this imagined "everything," the imagined egg and lobster flesh, which we resist through our moral and theatrical demonstrations of abstinence.

Two decades after his early experiments with surrealist objects, Dalí produced an architectural interior in his own home that continues this theme, but positions the displacement of desire in an interior space. Dalí's house, sited organically into the hillside of Port Lligat, is a labyrinthine residence built progressively over five decades. One of the most extraordinary spaces, the approximately hemispherical Oval Room, was conceived as an architectural analogue of the egg.[18] The design of the room and its connection to the adjacent neighboring spaces is a coherent realization of the metaphor and reality of the egg. The entry passage leads toward the broad fireplace, and these two are the only interruptions to the perimeter's continuous pink couches. Upon sitting down, due to the hemispherical form of the room and the curvature of the couches, the line of sight is directed across the center of the floor to the opposite couch. The room directs the orientation of posture away from the room's exit. Windows allow light to enter, but they admit no views outside. The lack of sunlight and heavy construction produce a thermal environment separated from the prevailing weather. The acoustic qualities of the low-domed ceiling exclude outside sound and amplify the noises of the room's occupants. The total effect is a powerful sense of enclosure and interiority (Figure 24.3).

From the outside, the Oval Room has no recognizable entrance. The single access point is concealed within another unusual room, the Room of Cupboards, which itself has two entrances. There is a door in the southwestern corner leading to the bathroom of Dalí's wife, Gala. A windowed exterior door in the middle of the southern wall opens onto a narrow, private passageway leading to the property's perimeter. All of the

remaining wall space is covered with cupboard doors, onto which are pasted photographs and magazine covers of Dalí and Gala's public life. There are many small, unexplainable irregularities to this room: one corner is chamfered at a slight angle, one cupboard is suspended slightly off the ground and has a short stepladder before it, and one cupboard is slightly recessed. With these small irregularities, and the overwhelming visual declarations of the photographs, it is effectively imperceptible that the recessed cupboard door in the corner conceals a short passageway leading to the Oval Room.

Heraclitus's aphorism that Dalí mused upon three decades earlier resonates clearly in this extraordinary architectural invention of the hidden, enclosed interior. Combining a skillfully designed concealment and an extreme experience of peaceful interiority, the room fulfills Dalí's interpretation of the egg as a symbol of intrauterine paradise.[19] Although Heraclitus's aphorism carries a tendency toward grand universalization, this project limits the subject to a sensed interior world. Thus, what is recognized internally as the world conveys a sense of wholeness; its finitude is a capacity to be grasped and eaten. Yet the desire to eat the containing architecture is again restrained, not out of modesty or eternal abstinence, but with the patience of self-affirming pleasure. In the intrauterine paradise, there is no unfulfilled hunger and no registration of a greater exterior totality that would generate a displaced synecdochic appetite. After years developing surrealist objects that express a growing universal hunger, this small space where hunger is contained and interiorized directs desire back toward the body. Bodies and the space surrounding them are perceived as a single, unified interior.

Figure 24.3 "Oval Room," Salvador and Gala Dalí's home in Port Lligat, Spain. Photograph by Simon Weir.

Image credit: © Salvador Dalí, Fundació Gala-Salvador Dalí/VEGAP; licensed by Viscopy (2015)

Notes

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2 "M. Tullius Cicero, *de Finibus Bonorum et Malorum*, 2.15", Perseus Digital Library, 1915, http://data.perseus.org/texts/urn:cts:latinLit:phi0474.phi048.perseus-lat1 (accessed 13 July 2014).

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4 Salvador Dalí, "Sant Sebastia", *L'Amic de les Arts (Stiges)* 16, no. 2 (1927): 52–54; Salvador Dalí, "Els meus quadros del Saló de Tardor", *L'Amic de les Arts (Stiges)* 2, no. 19 (1927): unpaginated supplement; Salvador Dalí, "New Limits of Painting – Part 2", *L'Amic de les Arts (Stiges)* 3, no. 24 (1928): 185–186; Salvador Dalí, *L'Ane pourri* (Paris: Éditions surrealists, 1930).

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8 Savinio, “Anadymenon”, p. 162.

9 Dalí, “Els meus quadros del Saló de Tardor”.

10 Salvador Dalí, “The Object as Revealed in Surrealist Experiment”, *This Quarter (Paris)* 5, no. 1 (1932): 197–207.

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15 Salvador Dalí, *The Secret Life of Salvador Dalí* (New York: Dial Press, 1942), pp. 319–320.

16 Dalí, *The Secret Life of Salvador Dalí*, p. 342.

17 André Breton, *What Is Surrealism?* (London: Faber & Faber, 1936), p. 59; Dalí, *The Conquest of the Irrational*, p. 4.

18 Salvador Dalí, *Diary of a Genius* (London: Creation Books, 1964), pp. 159–160.

19 Dalí, *The Secret Life of Salvador Dalí*, pp. 82–83.

Chapter 25

Touch, taste, smell

Fostering museum visitor engagement with multisensory spaces

Kirsten Brown

Museums are, by design, institutions that convey the importance of culture and heritage by preserving and presenting collections that represent the changes and advancements in the arts, sciences, histories, and societies of the world. Modern museums have undergone several variations over the last two centuries. *Wunderkammern* (cabinets of curiosities) were collections of antiquities, specimens, and works of art assembled by society's elite in a grand display of power and wealth, and presented for the purpose of study and enrichment. Eventually, access to such collections expanded and many would become the foundations of what are now the most notable museum collections (Musée du Louvre, Galleria degli Uffizi, and the British Museum, for example). In their earliest iterations, museums encouraged a multidimensional encounter with objects. Visitors were treated as guests, with the freedom to examine objects with their own eyes, hands, ears, and noses, and sometimes even to take a taste.[1] It was taken for granted that

deep understanding of an object – its history, its purpose, its context – required a multisensory investigation engaging space.

As audiences continued to grow, it became necessary for museums to adapt handling policies in consideration of the long-term preservation of their collections, while still fulfilling the need for cultural education and enrichment. These more restrictive policies were facilitated in part by the advent of electric lighting, which allowed visitors to observe objects clearly from a distance. Later, an aesthetic shift in the modern era placed total importance on sight-based discourse, further eliminating the non-visual senses from the museum experience. These circumstances combined to result in almost universal sensorial neglect in exhibit design. Although this one-dimensional approach continues today, many institutions are beginning to "challenge the restrictive politics of the modern museum."[2] Innovative methods of incorporating sensorial stimulation into interior spaces used by museums to exhibit collections objects have a calculated, direct impact on how visiting audiences interpret and relate to the subject matter. Nina Simon explains, "design decisions can help them successfully achieve content and experience goals … developing participatory experiences in which visitors create, share, and connect with each other around content."[3] Through their use of thoughtful exhibit design, museums also have a unique opportunity to guide the audience's understanding and acceptance of cultural differences, while providing a source of education and entertainment. According to Zisch, Gage, and Spiers, "As we experience a museum our brain constructs its own internal museum of the mind… . This process is fundamentally guided by the architecture of the space and its influence on our perceptions and expectations."[4] The following examples serve to illustrate the ways in which museum spaces can facilitate a more meaningful museum experience by incorporating elements that work to engage audiences beyond the visual realm utilizing touch, taste, and smell.

~~Don't~~ touch the art

Anyone who has visited a museum is familiar with the ubiquitous – and sometimes aggressive – no-touch policy. Buzzing alarms, physical barriers, and watchful guards are all employed to maintain a safe distance between the object and the visitor. Some institutions, however, are beginning to lighten, or in some cases even eliminate, the structures and policies that restrict direct access to collections objects with the hope that closer investigation will facilitate a more complete understanding of the objects and a deeper connection to the stories behind them. Efforts which reject the notion that museum exhibits should be seen, but not touched, support scientific evidence that the experience of an object is more complete with the incorporation of touch, that the human brain is wired for multifaceted sensation of physical objects. According to Lacey and Sathian,

> Many brain regions previously considered to be specialized for various aspects of visual input are now known to be activated during analogous tactile or haptic (passive or active touch, respectively) tasks … when feeling an object, one naturally imagines what it looks like.[5]

Touching an object does not exclusively contribute to the touch sensation; it adds a layer to visual sensation as well. The visual presence of an object illustrates the subject matter. The feel of the object's surface (tool marks, damage, blemishes, areas worn from repeated use) brings to life the narrative of its life, context, and cultural value.

Museums have adopted a variety of methods for facilitating tactile encounters with collections in how they construct exhibit spaces and what they choose to include within the space. At the Galleria degli Uffizi in Florence, visitors are invited to use gloved hands to touch a number of Renaissance and mannerist sculptures as they walk through the airy galleries and corridors. They can feel the textures and intricate details much like the artists themselves would have. Many museums, from university special collections to the Musée du Louvre, allow scholars and scientists to investigate objects (under close supervision) in sparse, organized study

spaces that more closely resemble libraries or laboratories than exhibit galleries. Through their design, these spaces actuate careful, inquisitive interactions with museum collections for the purpose of academic study. Other museums put authentic objects to practical use, supplementing their authentic collections with historically accurate replicas that simulate physical interactions with objects as they occurred in the past. At various locations around Old Sturbridge Village, a living history museum in Sturbridge, Massachusetts, visitors enter houses, shops, and other places of business to observe what life was like in late-eighteenth and early-nineteenth-century America. Freestanding structures, built with local materials and methods faithful to those of the period, are filled with authentic artifacts "made or used by rural New Englanders between 1790 and 1840."[6] "Villagers" demonstrate everyday tasks and interact with the public as they go about their work, offering objects for them to touch and try (Figure 25.1). These built environments immerse the audience in the period, allowing them to experience a former way of life, to participate in it, rather than simply observing it via a series of independent objects on display in a formal exhibit.

While each of these examples illustrates how museums are beginning to incorporate tacticity into their interior environments, facilitating touch in museums offers another role. It is also a catalyst for the inclusion of those who are physically unable to visually engage with objects and spaces. Rebecca McGinnis explains, "The perspective of visitors who are blind or partially sighted, a group often excluded or marginalized by art museums, is significant in drawing attention to the richness of experience beyond the visual museum that a museum can offer."[7] In response to the need for innovative ways to engage visitors who do not rely on sight for their experience and interpretation, some museums are developing exhibit spaces specifically designed for the benefit of the vision impaired. *Touching the Prado*, a 2015 art exhibit at the Museo del Prado in Madrid, Spain, employed the latest three-dimensional printing technology in collaboration with experts in visual impairment to render famous works of art accessible to those who could not see them. Works representing six genres from the

museum's permanent collection of paintings were exhibited with the objective of "bringing a heightened degree of artistic-aesthetic creative enjoyment" for blind and limited-sighted guests.[8] Coupled with braille didactics and supplemental audio guides, the exhibit facilitated a multifaceted, independent engagement and interpretation of works of visual art for those who typically experience art through third-party explanations.

Figure 25.1 Left, A cobbler in his shop at Old Sturbridge Village demonstrates the process for making shoes at the turn of the nineteenth-century. Right, Visitors are invited to give hand-made shoes a try.

Image credit: Kirsten Brown

Although the touchable masterpieces were clearly the highlight of the exhibit, equal attention was given to the exhibit space itself. At first glance, the gallery appears to evoke the typical "white cube," but upon closer investigation, the intent behind its simple design is revealed. The white walls are sparse, as decorative imagery or text are unnecessary to fulfill the purpose of the exhibit. The works are displayed on slightly angled platforms that place them at a natural height and distance from the audience – at arm's reach rather than safely hung out of reach. Didactic panels in braille and text accompany each work to provide a description and historical information. Pedestals are the only fixtures in the room, placed at regular intervals to encourage a clear, unobstructed, natural flow through the exhibit. Water bowls are also placed throughout the gallery to provide refreshment for accompanying service dogs. Every detail of the exhibit space was designed with the target audience in mind.

A peripheral outcome of the exhibit is the added value of touch in the experience of sighted visitors. In his essay *The Secret of Aesthetics Lies in the Conjugation of the Senses*, anthropologist David Howes describes the aesthetic benefit experienced by sighted visitors who are able to complement visual observation with tactile interaction: "Sighted visitors found their experience of a painting to be enriched when they were able to simultaneously view and explore a painting manually with the aid of a tactile model."[9] Including the option to make physical contact with museum objects fosters a meaningful connection between the visitor and the subject matter and, by extension, a connection between the visitor and the museum.

All in good taste

The sense of taste, in its most simple definition, is the stimulation of taste buds resulting in the perception or experience of flavor. The human experience of taste, however, is much more complex, having layers of social, cultural, and even political meaning. Ingredients and recipes serve as hallmarks of culture and identity, evoking memories of people, places, and experiences. Museums have begun to explore the potential for meaning-

making by developing carefully curated taste experiences within or in addition to their exhibit spaces. Walking through galleries and exhibit halls, the impact of food on society makes a consistent mark. Antiquities used for making and storing food tell stories about traditions and methods used throughout history, and detailed paintings illustrate the beauty of a sumptuous meal, but there is often a disconnect between what the visitor sees and the actual cultural and sensorial significance of food. Irina D. Mihalache notes,

> While taste and its signifier, food, have been present in museums for quite some time as subjects of different works of art, artful dishes in restaurants and cafes, food's own materiality as an object with educational potential has rarely been explored.[10]

Making and sharing a meal is a universal form of communication and is a means of connection between people and their environment. By providing opportunities to incorporate taste into their visit, "the overall museum experience becomes more participatory, multisensorial, and more engaging for the visitor"; museums are able to create an emotional response and connection in addition to the cultural-educational museum experience.[11]

The museum cafe has been a common element of museum design for decades. It has begun to undergo reinterpretation as an integral contributor to meaningful engagement with a museum's subject matter. The dishes served to the public, and the design of kitchen and dining spaces themselves, have the potential to provide visitors with a tangible understanding of the culture represented by the chosen cuisine. The spatial design and the meals served at Mitsitam Native Foods Cafe (*mitsitam*, meaning, "Let's eat!" in the native language of the Delaware and Piscataway peoples) at the National Museum of the American Indian in Washington, DC, emphasizes the need for careful consideration of the role of food in the visitor experience as a complement to what they see in the exhibit halls. The cafeteria is divided into five food stations with menu offerings that include:

> … maple brined turkey with cranberry relish (Northern Woodlands), chicken tamale in a corn husk with peanut sauce (South America), cedar planked fire-roasted juniper salmon platter (Northwest Coast), yellow corn or soft flour tortilla tacos with carne (Meso America) and the crowd-pleasing Indian taco – buffalo chili on fry bread topped with onions, lettuce, tomato and cheese (Great Plains), which depict regional lifeways related to cooking techniques, ingredients, and flavors found in both traditional and contemporary Native dishes.[12]

Each station offers an opportunity to explore not only the flavors of Native American cuisine, but also traditional methods of production, like the custom-built fire pit used for food preparation and cooking demonstrations.

Restaurants are an extension of the museological space with the ability to "educate and encourage visitors to think reflectively about what they eat and how their taste constructs stereotypes and ideas about other communities and cultures." The design of the interior space where this interaction takes place reinforces these ideas.[13] Every interior architectural detail of the dining area at NMAI was built with Native American cultures as an inspiration. The architects and designers maintained an ongoing conversation with Native American communities from across the Western hemisphere to faithfully represent the architectural traditions, craftsmanship, and cultural sensibilities of Native American peoples. The curvilinear forms and vertical cedar paneling of the restaurant interior reflect similar conditions on the exterior, evoking wind-sculpted rock formations and dense forests found in the natural landscapes of the Americas. As Frances Hayden describes in *We the People*, "The landscape flows into the building, and the environment is who we are. We are the trees, we are the rocks, we are the water. And that had to be part of the museum"[14] (Figure 25.2).

Although thoughtful museum dining spaces are the most common method for incorporating taste into the museum, some take the concept much further, building exhibits or even entire museums around taste experiences and their related history and culture. The Southern Food and

Beverage Museum in New Orleans, Louisiana, "examines and celebrates all the cultures that have come together through the centuries to create the South's unique culinary heritage."[15] While the museum displays exhibits about the diverse culinary history of the South, it also serves as a community center providing lectures, demonstrations, and tastings that create a living history and meet the needs of the local community. In his essay "To Exhibit, To Place, To Deposit," Hans Hollein explains how "the role of the museum is generally in the process of being restructured as far as both tasks and content are concerned, as are its relations with the public."[16] Accordingly, the Southern Food and Beverage Museum is embracing the changing role of museums, which has evolved to focus on its responsibility to the local community not only as a cultural center, but also as a community center. Its galleries are accompanied by working kitchens where members of the community can partake in programming that brings the subject matter to life. Much as the kitchen is the social center of the home, the kitchen is also the social center of the Southern Food and Beverage Museum; it is used to take advantage of the fact that food – its production, its preparation, and the ritual of sharing a meal – is both formed by and contributes to community identity and the role the museum plays in that identity. Irina Mihalache states, "taste … can be educated by the self and by the larger social, political, and cultural contexts."[17] By using the museum space to facilitate direct interaction between visitors and Southern cuisine, it provides the opportunity for the community to build stronger ties with its own history and culture.

Figure 25.2 Mitsitam Cafe at the National Museum of the American Indian. Top, the interior details of the dining area. Center, an open fire pit used to employ traditional food preparation techniques. Bottom, cafeteria stations with seasonal menus reflecting traditional cuisines from five Native regions.

Image credit: Emily Francisco

The nose knows

The human sense of smell is largely overlooked as a tool for interpretation and is typically only considered in the context of pleasure: perfume, candles, flowers, and food. When considered in a deeper context, smells facilitate the recollection of memories, emotional response, and a multidimensional

impression of a place, object, or experience. Museums have only recently begun to exploit the value of smell in their exhibits, "moving toward an appreciation that people have more than one sense – vision – and that the other senses can be productively employed to enhance patrons' experience."[18] For a truly meaningful sensorial engagement, smell interaction must be utilized as more than a novel detail.

Smell-inclusive exhibits most often use smell as a complement to an established narrative to "create a more realistic and engaging sense impression" of the subject matter, taking an existing topic and adding a compelling new layer to the exhibit.[19] Located in an otherwise unremarkable hallway near the gift shop of the Cooper Hewitt Smithsonian Design Museum in New York, the 2016 Triennial exhibit *Smell, The Beauty of Decay: Smellscape Central Park Autumn 2015*, by Sissel Tolaas, invites visitors to experience Central Park, which lies adjacent to the museum, using solely their sense of smell. Accompanied only by a small map of the park and a tiny room filled with the artist's tools for scent experimentation, the primary focus of the exhibit lies in what seem to be bare walls. Tolaas infused the wall paint with a scent profile constructed from samples of "smell molecules" taken from Central Park to "arouse memories, recreate place, capture seasonality, and stir emotional and intellectual responses."[20] A gentle application of friction to the painted surface releases the scent, which is then aerated (Figure 25.3). "You see that it is really a scientific process with molecules in a very sterile context," explains Andrea Lipps, assistant curator at Cooper Hewitt, "The exhibition itself is trying to challenge visitors to approach design and experiences with objects with much more sensitivity."[21] The simple layout of the exhibit space allows its objective of communicating the smells of Central Park to take center stage, while its placement in relation to other museum spaces and the direction of foot traffic ensure that it does not go unnoticed.

Figure 25.3 Top, a visitor experiences the scent embedded in the walls. Bottom, the exhibit space is placed adjacent to the museum store.

Image credit: Meghan Ferrucci

Scent is a notoriously difficult medium to effectively preserve and transmit to the public, and so it presents unique challenges for use in museum contexts. On a psychological level, "people form all types of personal associations and judgments about smells from … their personal experience."[22] Each person has a unique interpretation of and reaction to different smells, which can make it difficult to direct the experience of smell

into a desired narrative. Additionally, Andreas Keller explains, "smells are more difficult to stably position in space than visual objects."[23] They must be presented in a way that preserves the authentic fragrance, effectively transmits it to the visitor, and does not interfere with other nearby smells. Smell can, however, serve as independent works of art worthy of primary focus in museum exhibits.

Museums are only just beginning to explore the value of smell for its own unique aesthetic value. *The Art of Scent*, a 2013 exhibit at the Museum of Art and Design in New York, highlighted the experimental and innovative nature of fragrance design with an equally experimental and innovative exhibit gallery that sought to "recognize and celebrate scent as a true artistic medium rather than just a consumer product."[24] The nearly empty gallery space, designed by Diller Scofidio + Renfro, featured a presentation of twelve commercial fragrances ranging from universal classics like *Chanel No. 5* (1921) to innovations in scientific fragrance development, like Daniela Andrier's *Untitled* (2010). In response to the "enormous industry based around designing and marketing commercial fragrances [whose] extraneous characteristics can also shape our perception of the scent, and sometimes even shape the scent itself," the unadorned space completely removes the fragrances from their commercial context.[25] As the visitor approached each fragrance, leaning into the "dimple," it released a small burst of scent from a hidden machine. Each scent quickly dissipates to nothing, having been "specially modified to resist sticking on skin or clothes," allowing each fragrance to be experienced without cross-contamination. All didactic information was displayed in the form of illuminated text, which periodically appeared and disappeared to avoid detracting attention away from the primary objective of purely olfactory sensation.[26]

Today's museum environments are embracing the evolving role of museums as participatory community centers while also maintaining more traditional objectives of preserving collections and providing a forum for education and entertainment, exercising the understanding that "exhibitions should enrich and enlarge the life of the person, child or adult, who sees

them. Their value lies not within the museum walls, but in how much the visitor takes with him when he leaves."[27] Exhibit spaces that incorporate opportunities for visitors to engage with objects and concepts using touch, taste, and smell facilitate interactions that "induce a sense of *being* part of the thing in question," instead of merely observing it from a distance.[28] Touch allows for a deeper understanding of materials and helps the visitor to develop a sense of ownership of their experience of museum objects. Taste "bridges the gap between personal experiences – each of us tastes food differently and intimately at a biological level – and collective meanings and values."[29] Smell takes advantage of unusual psychological properties linked to personal experiences to invoke an emotional reaction or connection to the subject matter. Museums, curators, and designers must consider spatial construction and their responsibility to create exhibit spaces where visitors can not only observe but also participate in meaning-making.

Notes

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2 Amy Ione, "Art and the Senses ed. by Francesca Bacci and David Melcher (Review)", *Leonardo* 47, no. 5 (2014): 515–516.

3 Nina Simon, *The Participatory Museum* (Santa Cruz: Museum 2.0, 2010), www.participatorymuseum.org/chapter1/

4 Fiona Zisch, Stephen Gage, and Hugo Spiers, "Navigating the Museum", in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space*, ed. Nina Levent, Alvaro Pascual-Leone, and Lacey Simon (Lanham, MD: Rowman & Littlefield, 2014), p. 215.

5 (MSM p. 3,4) Simon Lacey and K. Sathian, "Please Do Touch the Exhibits!", in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space*, ed. Nina Levent, Alvaro Pascual-Leone, and Lacey Simon (Lanham, MD: Rowman & Littlefield, 2014), p. 3, 4.

6 "Collections", Old Sturbridge Village, 2015, www.osv.org/

7 Rebecca McGinnis, "Islands of Stimulation", p. 319. 2014.

8 Renee Phillips, *Museum Art Program for Visually Impaired Visitors*, 4 March 2015, www.healing-power-of-art.org/art-program-for-visually-impaired-visitors/

9 David Howes, "The Secret of Aesthetics Lies in the Conjugation of the Senses", p. 297.

10 Irina D. Mihalache, "Taste-Full Museums", in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space*, ed. Nina Levent, Alvaro Pascual-Leone, and Lacey Simon (Lanham, MD: Rowman & Littlefield, 2014), p. 197.

11 Robert Barthes, "Towards a Psychosociology of Contemporary Food Consumption", in *Food and Culture: A Reader*, 3rd ed., ed. Carole Counihan and Penny Van Esterik (New York: Routledge, 1997), pp. 28–35.

12 "Architecture and Landscape", 2015, http://nmai.si.edu/visit/washington/architecture-landscape/

13 "Mitsitam Cafe", 2015, http://nmai.si.edu/visit/washington/mitsitam-cafe/

14 Francis Hayden, "By the People", *Smithsonian*, September 2004, pp. 50–57.

15 "Southern Food and Beverage Museum", 2015, http://natfab.org/southern-food-and-beverage/

16 Hans Hollein, "To Exhibit, to Place, to Deposit: Thoughts on the Museum of Modern Art, Frankfurt" in *New Museology*, ed. Andreas Papadakis (London: St. Martin's Press, 1991): 41.

17 Mihalache, "Taste-Full Museums", p. 202.

18 Richard J. Stevenson, "The Forgotten Sense", in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space*, ed. Nina Levent, Alvaro Pascual-Leone, and Lacey Simon (Lanham, MD: Rowman & Littlefield, 2014), p. 162.

19 Ibid., p. 152.

20 Sissel Tolaas, "Smell, the Beauty of Decay: Smellscape Central Park Autumn", 2015. For *Beauty – Cooper Hewitt Design Triennial*, Cooper Hewitt, Smithsonian Museum of Design, 2016, https://collection.cooperhewitt.org/objects/69155275/

21 Alex Palmer, "Can Smell Be a Work of Art?", 23 February 2016, www.smithsonianmag.com/smithsonian-institution/can-you-smell-work-art-180958189/?no-ist

22 Jim Drobnick, "The Museum as Smellscape", in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space*, ed. Nina Levent, Alvaro Pascual-Leone, and Lacey Simon (Lanham, MD: Rowman & Littlefield, 2014), p. 188.

23 Andreas Keller, "The Scented Museum", in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space*, ed. Nina Levent, Alvaro Pascual-Leone, and Lacey Simon (Lanham, MD: Rowman & Littlefield, 2014), p. 167.

24 Jimmy Stamp, "The First Major Museum Show to Focus on Scent", *Smithsonian Magazine*, 16 January 2013, www.smithsonianmag.com/arts-culture/the-first-major-museum-show-to-focus-on-smell-1787124/?no-ist

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26 Ibid.

27 Katharine Beneker, "Exhibits – Firing Platforms for the Imagination", *Curator: The Museum Journal* 1 (1958): 76–81.

28 Stevenson, "The Forgotten Sense", p. 161.

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Part five

Temporalities

Chapter 26

A pirouette on the orthographic hinge

Lois Weinthal

> *Some were small hurrying lights, as if servants dashed along corridors to answer summonses; others were high and lustrous lights … and others dipped and waved and sank and rose, as if held in the hands of troops of serving men, bending, kneeling, rising, receiving, guarding, and escorting with all dignity indoors.*[1]
>
> — Virginia Woolf, *Orlando*

In Virginia Woolf's novel, light was the medium that made the movement of domestic helpers visible by the main character, Orlando, and revealed their actions in his palatial residence as he looked on, from a distance, from one interior into another. A subtle yet significant detail of this text was the decision to set the story in the Elizabethan era and reveal the intimate tracking of the body through a single point of light illuminated by an oil lantern or candle. By choosing this setting, Woolf accomplished two significant spatial maneuvers in her text: the first being the characters' movements mapped by their direct connection to light, and second,

Orlando's view from a distance resulting in a degree of objectivity, setting apart the observer from the observed.

The practice of interior design anticipates the movement of occupants where time as a variable reveals temporary events that take place. Time-based events distinguish interiors from the static form of architecture, yet the documentation of both these spatial realms defer to orthographic drawings as the unifying form of representation. Orthographic drawings work well to record forms that foresee no change until a renovation prompts a new set of orthographic drawings. With Woolf's excerpt in mind, Orlando's palatial residence could be documented in orthographic projection, but the system is not conducive to the temporal movements of the occupants since they are not static like architecture. It is possible to imagine that in the time it takes to draw a room, occupants could be moving in and out without a trace of their presence in the room, and orthographic drawings like it that way; it keeps the space clean and objective rather than muddy with the ephemeral shoes of people walking through it.

This introduction sets forth the overarching intention of this chapter, which is to probe the orthographic projection drawing system to find where it loses its grip on supporting the work of the designer. This fissure takes place where the temporal activities on the interior are left off the orthographic drawing. The conceptual hinge that binds the framework of plan and section follows a set of logical rules that provide true data under the assumption that only physical elements are documented. This system is conducive to the static nature of architecture. In contrast, interiors align with time-based activities but are typically absent in orthographic drawings. However, they are still part of the architecture when occupation of the interior begins at full scale.

This chapter makes reference to various scenarios used to reveal the dynamic life of interiors that exist simultaneously with the static architectural realm. The orthographic hinge will be compromised in order to test how dynamic elements can be made visible. What is seen in plan may not always be present or align with what is seen in section, and vice versa. In order to insert these temporal elements into the orthographic system, it is

necessary to understand what grounds them to the physical world, in order to fall under the context of true data, and form a realignment back to the principles of orthographic projection. At the same time, the temporal elements draw into question ways in which the orthographic system has the potential to evolve. In order to develop a relationship between the temporal and static in orthographic projection, an explanation of the orthographic system with emphasis on specific variables will be highlighted that segue into subsequent sections of this chapter. These variables will be placed in the context of movement by dancers, and to some extent, actors, all of whom are based on a stage where plan and section are mimicked through the blank slate of stage floor and backdrop. Movement by dancers and actors reveal where temporal occupation aligns and misaligns with orthographic projection.

A set of elements identified in Orlando's residence, being the points of light, domestic chores, and the observer, will appear again as variables in examples that follow. In the first section, a dancer's pirouette will help visualize how movement can be documented differently in plan and section. The concluding example will return to a conventional interior setting arranged by industrial engineers who sought to document the moving body in order to design for ergonomically improved domestic interiors. In these examples, the fleeting can always be grounded in true data, and the means by which the fleeting is documented can be captivating due to the invisible forces that are being made visible.

Orthographic projection

Orthographic projection is the fundamental drawing system in interior architectural design for grounding a project in true measurement in order to convey information to builders. The system provides a universal form of visual communication by utilizing a set of variables that have reached a level of objectivity. The evolution of this drawing type relies upon a clear set of rules whereby a field of parallel lines meets a perpendicular surface. Plan, section, and elevation inform one another across invisible hinges that result

in a collection of two-dimensional views folded up to convey a three-dimensional form.

The perpendicular relationship is neutral until the draughtsperson activates the latent field of invisible parallel lines received by the passive surface patiently awaiting the drawn line, also known as the picture plane. The receiving surface is meant to be flat in order to record the lines with precision, otherwise a ripple in the picture plane would disrupt the rules and potentially cause misinterpretation. The parallel lines can be seen as a collection of points that appear on the paper and assist the draughtsperson in realizing a design, but at a scale that is manageable at the size of a desk. Point, line, and plane help translate back and forth between one, two, and three dimensions, where the point can be seen as the fundamental element upon which everything else is built. What appears as a point or line in one drawing (such as a plan), may appear as a plane in another drawing (elevation), hence the need for multiple views in order to piece together an understanding of the whole. As the design appears on paper, the drawing requires that the form being recorded hold still, as if being drawn for a still life. This works for static elements but is unaccepting of the temporary and fleeting. This matters not so much for architecture, but it matters in interior design, where the practice is responsible for designing the temporary and fleeting. Time is a variable inherent to the temporal, but absent from this drawing type. With these variables and rules in place, how can the designer integrate the temporal? The next section of this chapter will use dance as a means of highlighting temporal movements of occupants to probe where the orthographic system supports or breaks from allowing the temporal to enter into the drawing.

Dancing across the hinge

The movement of a dancer is a myopic representation of how the body moves through space. It is choreographed and predictable, unlike the casual occupant who walks through a room and can make an unpredictable decision about their trajectory based upon environmental cues as simple as

the placement of furniture, light, and other occupants. There is a distinction between the empty stage activated by a dancer and a room programmed to fulfill the needs of an occupant. Both can be documented using orthographic projection, with the former resulting in a simple view and the latter with more complexity. The surfaces and interruptions on it, whether they be furniture or objects, are easy to document because of their static nature, but orthographic projection does not like movement. The system relies upon static surfaces for precise documentation where relationships of proximity are gauged against one another. This helps the hinge between plan and elevation find inherent alignment so that one does not have to go chasing the other, but the movement of people is dynamic and does not fit easily into this system. Rather than trying to pinpoint the occupant to one location captured at a precise orthographic moment, this chapter seeks to follow the dancer in space in order to provoke the orthographic drawing and its hinge.

An entry point into the movement of dancers is the pirouette. It is dynamic and static at the same time. The body is twirling in motion around a single point: the pointe shoe of the dancer. In the plan view where pointe shoe meets floor, the location of the body can be located as a dot. What the drawing does not reveal is the turning of the pointe shoe and inherent movement of a pirouette. In this case, the movement takes place in plan drawing but there is no distinction as to whether it is static or dynamic. As the view moves up from plan to elevation, the asymmetry of the pirouette pose can no longer be documented in the language of point, line, or plane. The tip of the pointe shoe does not extend upward to a line; the body becomes a blur, which the orthographic system does not like. The pirouette is a unique example when placed in dialogue with the orthographic system. It allows for the body to be captured at about an inch above plan, but loses connection beyond that (Figure 26.1).

To capture a dancer in motion, time is necessary to record change. This can be accomplished through photography, as seen in the works of Jules Etienne Marey or Eadweard Muybridge, where change is registered over a sequence of still frames. At the height of her career, Anna Pavlova, the Russian ballerina, was known for her performance of *Swan Lake* during the

turn of the twentieth century. Her role as the dying swan, which she immortalized, brought her to the foreground of ballet as the preeminent ballerina of her time. She would continue to perform as the lead in *Swan Lake* across international theatres until her career ended unexpectedly. On the eve before one of her performances scheduled in The Hague in 1931, a rapid decline in her health was brought on by an inflammation of the lung and resulted in her death.[2] It was not anticipated that this would be her last performance, and as an anecdote goes, the performance went on but rather than being danced by Pavlova, she was represented by a point of light moving across the stage to mark her movements. The point of light was a projection that registered on the floor, similar to an orthographic plan view marking one-dimensional points, and similar to the pirouette discussed earlier. There are a number of variables at play in this scenario. Plan view, perpendicular projections, and markings are variables that fall under the orthographic system. Since this system is not conducive to the recording of a person, perhaps light as a replacement for the body can be considered an intermediate step toward an alternative iteration of the drawing. After all, the same rules and variables apply.

Figure 26.1 Dancer's pirouette

Image credit: source unknown

Space-shapes

The introductory epigraph from *Orlando* described movements of the body when undertaking domestic chores. Woolf placed emphasis on movements such as "bending, kneeling, rising, receiving, guarding, and escorting," rather than the specific tasks associated with them. We know that kneeling in the

context of domestic chores could apply to the task of putting items away, cleaning the floor, and so on. At a formal level, designers would categorize these tasks with familiar programmatic terms, and the alternative would be to situate the actions in the context of anthropometric studies. The difference between these two may appear subtle as one folds into the other, but the distinction between them is what separates programming spaces through diagrams versus empirically documenting the body in action.

Jane Callaghan and Catherine Palmer were industrial engineers conducting research in the 1940s with emphasis on improving the design of the domestic realm by documenting the moving body undertaking domestic chores. They sought to capture the moving body and frame it within categories of tasks, but their intention was first to see how the body moved in time and space before making assumptions about the programmed interior. Thus, they knew to separate programming from anthropometric studies. In order to study these movements, they developed methods of documentation using 35mm camera photographs followed by a translation of these images into three-dimensional models.

Their studies documented people undertaking singular activities such as washing hair, getting dressed, and putting on stockings. The results were summarized and published in their 1944 book, *Measuring Space and Motion*, where they describe their intention of these experiments as "the development of techniques by which space used by the human body in action can be recorded, measured, and reproduced in tangible three-dimensional form useful as the basis of house design."[3] Callaghan and Palmer developed a system for documenting their models in a "stage" setting that mimicked the drawing relationship of orthographic projection. With a stage, multiple 35mm cameras, and mirrors in key locations, they documented their actors in "three or more simultaneous views of these definitive motions, a method of correcting for perspective, and a method of presenting a final space-shape to scale."[4] In order to produce documentation and understand the subject matter "in-the-round," they relied upon multiple views, each taking on a drawing view typical of orthographic projection that included plan and elevations. The images were synthesized to form a three-

dimensional model, but what emerged in the process was the challenge of finding a common line that each image could align to for precision. In the example of washing hair, “It also happened that the front views were photographed at a greater distance from the camera than the side views. This necessitated enlargement of the front view before the two composites could be joined together to make the model.”[5] The scalar difference in the photographs needed correction for their images to align, but a second challenge was the need for the multiple views being photographed to be taken simultaneously to help with the alignment in the three-dimensional model. This would ensure that if an arm were raised in the air in one view, that another view would capture it at the same time and location. The need for multiple views and a reference line upon which to gauge all data falls within the rules of orthographic projection. While they faced technical challenges that may seem minor with our current technology, theoretically they were early pioneers chipping away at the challenge of locating the moving body in orthographic projection. Inherent to the orthographic system is the ability to take individual views of an object and fold them up into a three-dimensional form in its most basic silhouette. If done correctly, shared information across all views will align. The photographs taken by Callaghan and Palmer were used in a similar manner. In their documentation of hair washing, the photographs were aligned around a core vertical axis, upon which multiple elevation photographs were centered. In this case, the central axis provided the hinge for connection.

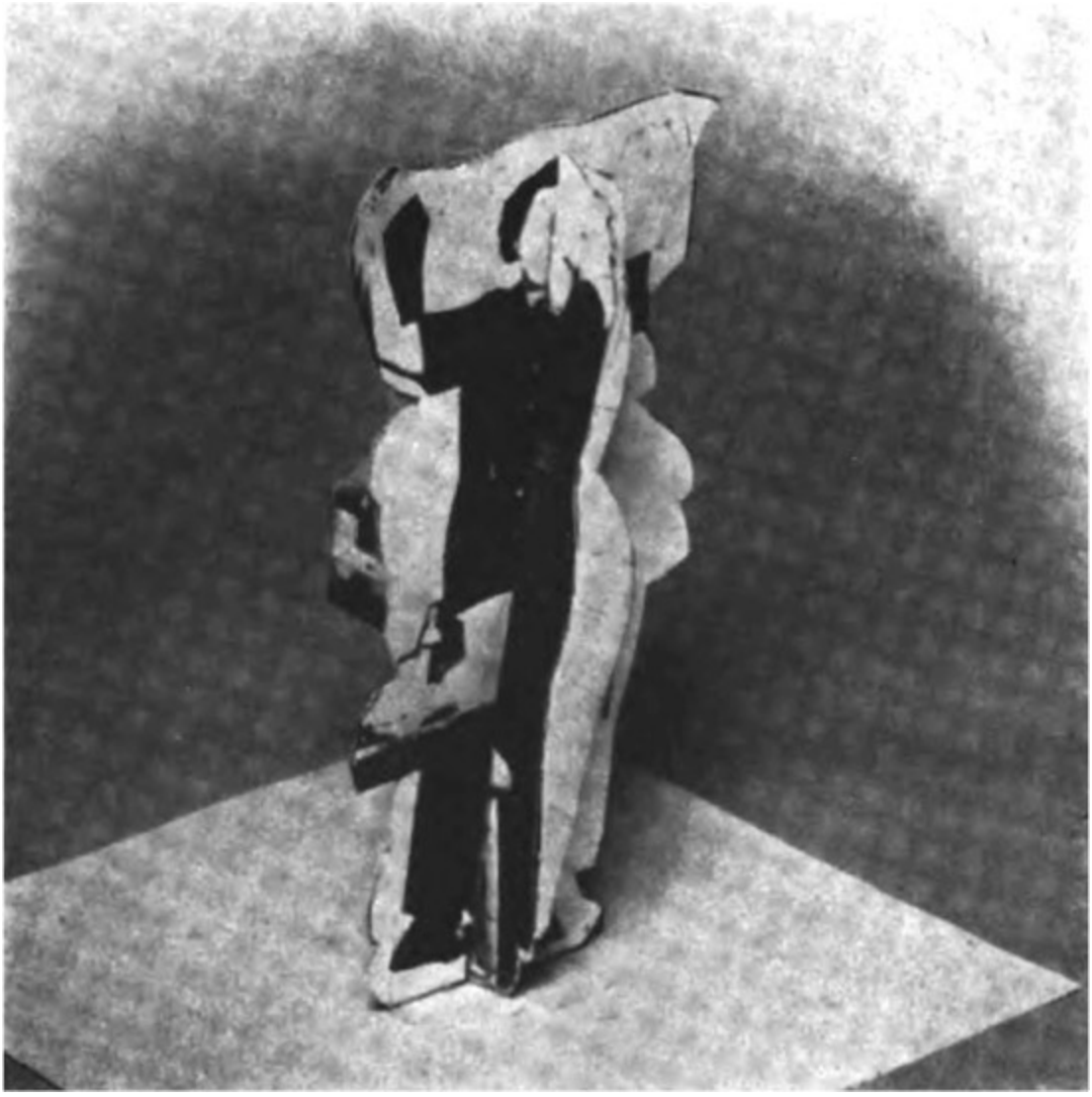

Figure 26.2 Three-dimensional planar model by Callaghan and Palmer using photographs taken from multiple views showing the body moving for washing hair. In Jane Callaghan and Catherine Palmer, *Measuring Space and Motion* (New York: John B. Pierce Foundation, 1944), page 15.

In other three-dimensional examples, they chose to look at the larger breadth of space taken up by the person performing a task, and rather than limiting themselves to *x*, *y*, and *z* planes for the model, they interpolated the body's movement from one view to another to fill in the diagonals. They called these outcomes "space-shape." The results would take the form of clay models, cardboard collages, wire figure armatures, papier mâché, and straws to name a few. The three-dimensional models captured

the collective set of movements from one action. At times, it appeared that the greater challenge was how to coalesce the views and represent the body in motion as a static model when the movement of the body is inherently fluid.

Light tracings

This chapter began with a description of Orlando watching his servants perform their duties based upon a light they held that made their actions visible from a distance. Similarly, the audience that was scheduled to see Anna Pavlova's last performance instead saw a beam of light dance across the stage to visualize where she would be. Light, as a form of marking a person's movements also factored into Callaghan and Palmer's work. One form of documentation they developed was called a "dark technique" photograph, whereby the actor wore "lights attached to head, hands, elbows, feet, and back… . The shutter of the camera was left open throughout the action and the moving lights recorded the paths of motion."[6] The photographic result was a time-lapse capturing movement made by the tracings of a point of light. In works like this where true data was extracted, while simultaneously fulfilling a phenomenal graphic, they gave an alternative form of representation of the moving body for designers to consider. Through their multiple experiments of documentation and representation, the collection of Callaghan and Palmer's work could be seen as the precursors to current motion capture technology.

Callaghan and Palmer worked within the principles of orthographic projection, and in some cases found ways of producing data of the moving body that the system accepts. As for the pirouette, it challenges the orthographic system to fracture at approximately one inch above the plan view. It is a point of registration, yet diverges as a discrete entity to become broader and more spatial, with the full view of the dancer as the view moves up in elevation from the single point. The fracture initiates an opportunity for another type of drawing to enter into the Cartesian relationship and form a new hinge. It may seem plausible for the rules of

construction documents to integrate this request, but a moment of disbelief is already inherent in the orthographic drawing – such as the rule that allows the dotted line to represent what is behind or in front of the picture plane, while still allowing the variables to remain constant.

If the rules were altered, what would happen? Is it possible that the outcome, if still following a set of rules, would result in another reading, much like the anamorphic drawing technique developed out of the conventions of perspective did during the baroque?[7] There is still precision in the anamorphic technique. The degree of objectivity that the variables and principles of orthographic projection have arrived at result in a set of rules distilled to fundamentals that are unarguable. The missing piece is the integration of movement that has yet to find a way into the drawing that can become part of the professional construction document set. In the examples given throughout this chapter, movement also has the potential to be distilled down to a set of rules, but it may have to be derived from the documentation of movement first, which can only help designers become better aware of how the body moves in space.

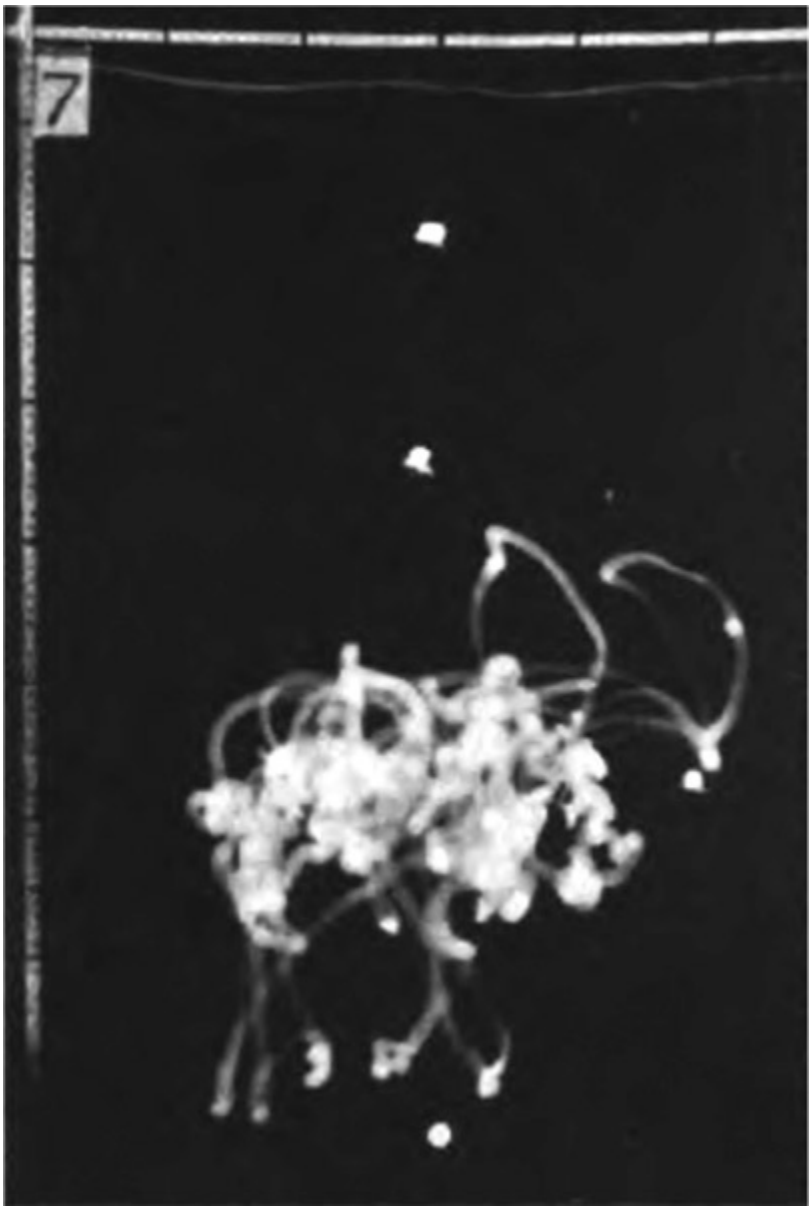

Figure 26.3 "Dark-technique" photograph made by Callaghan and Palmer using lights on an actor to show movement of putting on stockings. In Jane Callaghan and Catherine Palmer, *Measuring Space and Motion* (New York: John B. Pierce Foundation, 1944), page 14.

The protagonist to this chapter, Orlando, helped usher in the question about how to represent the moving body in the orthographic language in order to have meaning to the construction document as it moves down (or up) the chain of construction. At the same time, Orlando goes on to challenge another kind of hinge, one that bridges male to female and

opens up discussions in multiple disciplines. In another scene from *Orlando*, observer and observed now change roles as it is the servants that watch Orlando as "a light passing along the galleries, through the banqueting-halls, up the staircases, into the bedrooms, and knew that their master was perambulating the house alone."[8]

Notes

1 Virginia Woolf, *Orlando* (New York: Harcourt, Inc., 1928), p. 20.

2 Oleg Kerensky, *Anna Pavlova* (London: Hamish Hamilton, 1973), p. 149.

3 Jane Callaghan and Catherine Palmer, *Measuring Space and Motion* (New York: John B. Pierce Foundation, 1944), p. 13.

4 Ibid., p. 5.

5 Ibid., p. 15.

6 Ibid., p. 14.

7 For an overview of the development of the anamorphic drawing technique, see Alberto Perez-Gomez and Louise Pelletier book, *Architectural Representation and the Perspective Hinge* (Cambridge, MA: The MIT Press, 1997).

8 Woolf, *Orlando*, p. 68.

Chapter 27

Toward the immaterial interior

Frank Jacobus

Constructed space is, and has always been, a culturally reflective and communicative mechanism. Materiality delivers messages within interior spatial environments, reflecting a cultural sensibility and intelligence, but also compelling future actions and desires. While we rightly tend to think of the built environment as a mechanism that betters life and aids in human advancement, an underlying persistent desire seems to be the fabrication of spaces to embody human thoughts within material constructs. In this way, we can discuss interior architecture as a spatial and material construct meant to preserve cultural or personal beliefs. The core ingredient of this effort is material itself, the physical or nonphysical substance that makes space possible.

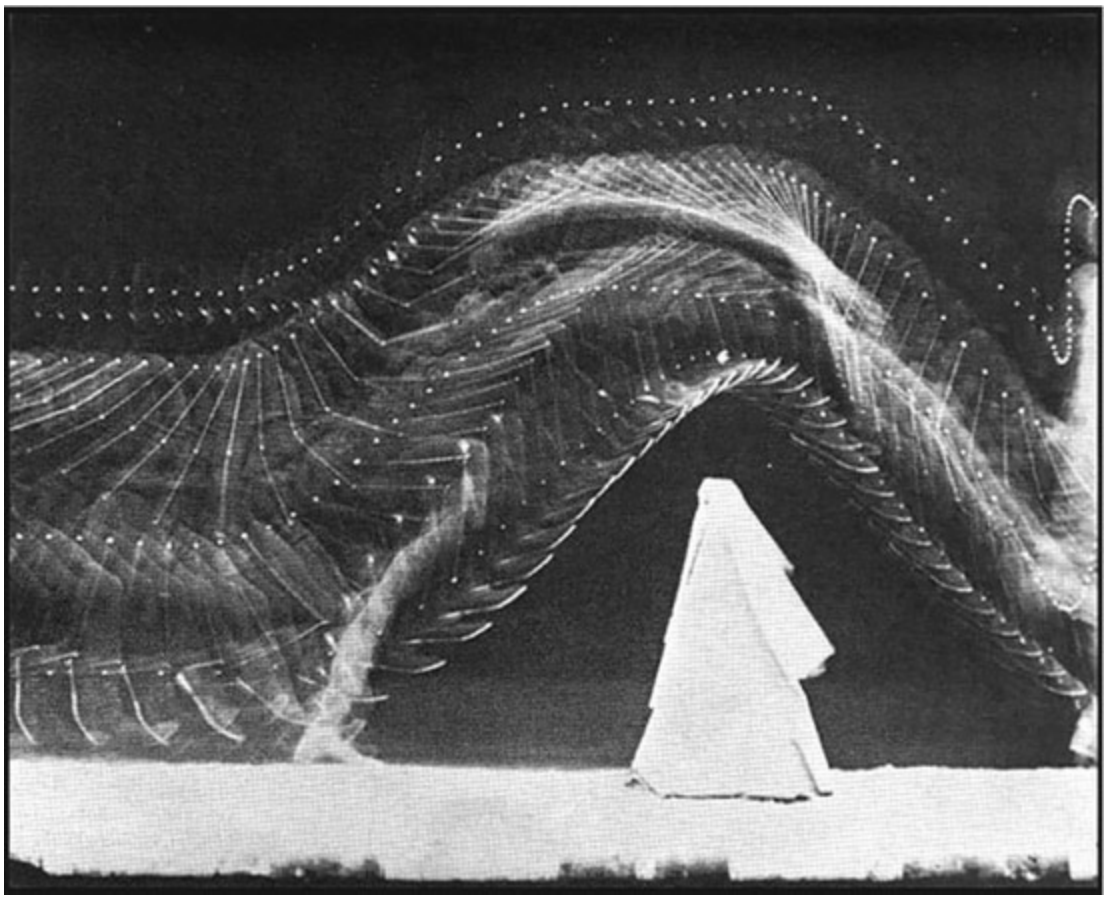

Figure 27.1 "Human Locomotion," Muybridge

Image credit: author

Generally speaking, in seeking permanence for human thought, we have moved from stone, to paper, and now to bits and bytes to write our story. Buildings and interior spaces, in addition to providing shelter and space for organized human activity, acted as the first primary human registers within which our stories and aspirations were communicated. Victor Hugo referred to buildings as "books of stone," as pre-Gutenberg cultures wrote their most important stories in and on these monuments, exercising extreme effort that they be remembered for generations.[1] With the advent of the printing press and the birth of a mechanized and more literate culture, the book established itself as a new medium, which would gradually remove the building as humankind's primary register. Physical,

"built" space was no longer able to compete with the comparative ease of production and transference of human thought that the book offered. Stories that were once written in stone were now written in books. Today is the age of the third register: digital technology.

Within the story of the evolution of these registers lies the story of the transference of human thought, from the corporeal and material to the present immaterial modes of production. With each new register, technological invention and evolution has provided a higher level of accessibility and transferability; these two critical components must be present when seeking endurance and permanence for human thought. As our modes of register become more ephemeral so do our modes of experience, affecting both how we perceive and how we create our built environment. Siegfried Giedion made clear in *Mechanization Takes Command* that this evolution of cultural registers has "confused the human environment" by splitting "our modes of thinking from our modes of feeling."[2] This chapter begins with the notion that there are three primary cultural registers of humanity, interior architecture, the book, and digital media. It interrogates the evolution of these registers as modes of transference of human thought, examining the impact they have had on the dematerialization of space.

The built environment as original primary cultural register

As stated above, Victor Hugo saw the built environment as an expressive form, very relatable to literature that used monuments to give "permanence to human thought."[3] To try to understand the effects of the dematerialization of human registers on the built environment and interior architecture specifically, we must make a distinction in the way buildings communicate or are embedded with a cultural language. Interior architecture can be thought of as embodying at least two paradigms in relation to its propensity to become a form of cultural communication.

In the first paradigm, interior architecture is a chiefly unconscious cultural expression. This occurs through spatial, material, and formal manifestations dictated by belief and by advances in material and building technology. In this paradigm, there is no conscious attempt to define one's culture in terms of the built environment. Subtle ways in which it is at work in interior architecture, as it forms the language of culture, can be found in the spatial formulation and layout of individual buildings. Siegfried Giedion describes the organization of the great Egyptian temples of the New Kingdom as being laid out in plan in a direct corollary of the Egyptian belief of allowing no "standstill in life or death."[4] The temple's rooms were intentionally designed to not allow a place of rest except in the dark *cella* (chamber), inside of which the "image of god was preserved."[5] In this way, the organization of interior spaces in the Egyptian temple was itself a materialization of cultural belief and value that can be read as a "specialized elaboration of culture."[6] This reading of space draws us nearer to an understanding of the inner workings of this phase of Egyptian culture. In creating the interior spatial layout of the temple, the Egyptians did not set out to transfer a cultural message, but did so simply by organizing the space in accordance with the dictates of their beliefs; an application of the first paradigm of cultural transference through interior architecture.

The second paradigm through which the built environment becomes a form of cultural communication has to do with a conscious expression of, or response to, culture through interior architecture. The Greek temple is yet another example of how buildings served as the books of pre-Gutenberg culture. The form and proportion of the Greek temple stood for the body of the god that was its dedication. For example, the temple of Zeus *was* the body of Zeus; the temple of Athena *was* the body of Athena. As an embodiment of the gods, and through its form, sculpture, and inscriptions, each temple became a chronicle of a particular aspect of Greek culture. In this way, the Parthenon is the *body* of Athena, but it is also the *book* of Athens.[7] These monuments have not only served as generational concatenations or epochal points of reference for the stories of ancient civilizations, but also served dually as physical manifestations of cultural

belief and tradition. In this case, the Greeks sent a message to their contemporaries and future generations through an application of the second paradigm of cultural transference through interior architecture.

Every building contains traces of both paradigms and there is no possibility of excluding either paradigm in a built work. Both paradigms, always working in conjunction, make interior architecture a cultural mirror into which we can look to gain access to the beliefs and customs of past cultures. Only through the looking glass of these two paradigms can we map the substantive effect of technological dematerialization on the cultural – and thus architectural – realm.

The book intercedes

The advent of printing had profound effects on culture at large. The rise of the book meant the rise of the academy and a new type of learning: learning "by the book." Knowledge gained by the reading of books was knowledge of events divorced from firsthand experience. No longer grounded in experience in relation to one's own body, the book afforded an increasingly vast number of literate citizens to peek into and pull from knowledge gained by past cultures. As Lewis Mumford points out:

> The printed page increased the safety and permanence of the written record by manifolding it, extended the range of communication, and economized on time and effort. So print speedily became the new medium of intercourse: abstracted from gesture and physical presence, the printed word furthered that process of analysis and isolation which became the leading achievement of eotechnic thought and which tempted Auguste Comte to dub the whole epoch metaphysical.
>
> More than any other device, the printed book released people from the domination of the immediate and local. Doing so, it contributed further to the dissociation of medieval society: print made a greater impression than actual events, and by centering attention on the printed word, people lost that balance between the sensuous and the intellectual, between image and sound, between the concrete and the abstract.[8]

The built environment and interior architecture in the era of the book's rise to power was not immune from this evolution of creative output, and during this period its formal changes embodied and represented the values of a changing culture. These changes to interior architecture happened over a long period due to the relatively slow advance of technologies that

would allow the book to be widely distributed and become what we would think of today as a mass medium. The rise of the academic tradition in the design disciplines, in large part made possible by the emergence of print media, was the vehicle by which the book altered constructed material environments. The academy as a means of training young architects began in the seventeenth century with the establishment of institutions such as the Academy of Architecture in Paris (which would soon become the École des Beaux-Arts), a forerunner of the modern system of educating architects and interior designers. Prior to this form of instruction, most designers and craftspeople were educated through the medieval craft guilds. If we compare the modern system to the craft guild, which was an apprenticeship-based approach, the major difference is the firm distinction that is made in the academies between learning and doing.[9] While the rise of the book was not completely responsible for this shift in cultural learning traditions, it certainly was a major player in their evolution. The new academic training of the seventeenth century, having blurred the distinction between book knowledge and knowledge gained by sensuous hands-on making, further differed from its medieval educational progenitor in that it focused on the study of classical precedents to establish a proper method of building, a method made possible by studying books that were now readily available to students and practitioners.

Figure 27.2 Young Women and Young Man Reading by the Light of a Patented Lamp

Image credit: author

The effect and influence of this new academic, "book-learning" approach can't be overstated when discussing how the built environment and interior architecture evolved over this period. In his book *What Is Architecture*, Paul Shepheard describes the gothic as representing "all the qualities that had been lost in paying too much attention to the mechanics of Rome and Greece."[10] In many ways, the rise of the book and its ease of dissemination can be seen as a collapsing together of previously fragmented histories. In other words, cultures and ideas that were previously disjointed by space and/or time were now being connected through books and book learning. In some ways, it seems that the introduction of the book as a mass medium is a point in history at which all cultural production becomes, at least in part, referential. Interior architecture transitions from serving a

preliterate culture, whose form was the result of a more insular, individual, and communal mentality, to serving a referential culture that learned to do by reading; happy to borrow their ideas from a former age. Surprisingly, it would take the benefit of four hundred years of hindsight before anyone was able to understand (or at least "put into words") that the changes that occurred in the built environment over that period of time were in large part a result of the arrival of the book and its succession of buildings as humankind's primary cultural register.

As the built environment and interior architecture gives over its cultural role to the book during this time, it becomes defined by the book in its spatial and material manifestations. Perhaps not surprisingly, interior architecture finds its raison d'être in the cultural phenomena that had arisen – or were propelled forward – due to the arrival of the book and the institution of "book culture." The neoclassical tradition (at least in the form promoted by the École des Beaux-Arts) would advocate the use of past cultural prototypes in establishing a new culturally symbolic value for interior architecture. In these examples that permeated eighteenth- and nineteenth-century culture, interior architecture becomes a symbolic historical stamp, whose form recreates an idealized past for a present world. These neoclassical interiors, though still retaining their physical mass and concreteness in the form of carved stone, were but a picture of a former age, which told a story no longer rooted in the culture they served. Their very physicality was denied by their lack of locality. More photograph than building, these interiors become a dematerialized postscript to gothic culture and the first examples of the effect of technological advance and dematerialization on interior spaces.

The Bibliothèque Sainte-Geneviève by Henri Labrouste is an example of a building that attempts to take its new spatial cues directly from books. In addition to the building's exterior acting as a virtual card catalog, the entire interior space tells a story that unfolds page by page, as if the visitor is perusing a book. Upon arriving at the building, the entry leads to an interior garden space filled with marble busts of great historical thinkers. Here Labrouste is referencing an original human state of being and the

gradual evolution (in large part due to the historical intellectual figures presented) into inquisitive, intelligent beings. Within the entry hall, the names that were read on the building's exterior are physically beginning to come to life within the stone effigies; they begin to be understood as three-dimensional, physical beings. Next, the visitor ascends a grand stair into the main reading room and is thrust, at the landing, into Raphael's *School of Athens* painting. So begins participation in that great intellectual dialogue; a highlight both of renaissance neoclassical intellectual superiority and of the transcendence of human reason. Finally, visitors arrive in the main reading room where they can pull books from the shelves and complete the dialogue with humanity's great thinkers, with whom they have been engaged since they arrived at the building. This abbreviated description of the spatial sequencing within Labrouste's library tells the story of an architect trying to grapple with what space becomes with the advent of a literate society. Buildings had replaced books as humanity's storytelling medium, and now interior architectural space was being defined and inspired by them.[11]

Rise of mechanization: roots of dematerialization

The arrival of the book, and consequently a literate culture, was born out of a gradual process of societal mechanization. Lewis Mumford cites the clock, then the printing press, as supplying a prototype for the future developments of industrial society. With the clock arose the invisible umbrella of time, organized and structured on a mass scale, "giving human enterprise the regular collective beat and rhythm of the machine."[12] That time, this mostly invisible and abstract instrument, can so affect, control, and order the lives of so many collectively is testament to the notion that the effects of the immaterial are being strengthened in relation to the material during and leading up to the industrial age. Timekeeping, or the notion that we can divide, organize, and commodify that which does not have a physical existence and is merely a construct developed by sheer human will, is perhaps another of the first signs that the material is beginning to relinquish control during the late Middle Ages and into the Industrial Revolution.

Mumford further describes the effects of the clock in the following statement:

> Abstract time became the new medium of existence. Organic functions themselves were regulated by it: one ate, not upon feeling hungry, but when prompted by the clock: one slept, not when one was tired, but when the clock sanctioned it.
>
> When one thinks of the day as an abstract span of time, one does not go to bed with the chickens on a winter's night: one invents wicks, chimneys, lamps, gas lights, electric lamps, so as to use all the hours belonging to the day. When one thinks of time, not as a sequence of experiences, but as a collection of hours, minutes, and seconds, the habits of adding time and saving time come into existence. Time took on the character of an enclosed space: it could be divided, it could be filled up, and it could even be expanded by the invention of labor saving instruments.[13]

Just as the world after the rise of the book was "lightened," in that information once conveyed through the weight of stone was now transportable by hand, the clock gave rise to new conceptions of abstract space, interchangeable and relatable over any distance, transportable in the minds of humans.

In the period from 1850 to 1890, the entirety of Western culture was trying to discover their relationship with new forms of mechanization.[14] As society mechanizes, one by one, concrete entities are replaced by their abstract counterparts. Mumford points to the romanticism of numbers as resulting in the

> rise of capitalism, and the change from a barter economy, facilitated by small supplies of variable local coinage, to a money economy with an international credit structure and a constant reference to the abstract symbols of wealth: gold, drafts, bills of exchange, and eventually merely numbers.[15]

The technological changes taking place in the world from the Middle Ages through the nineteenth century is further evidence that the major shifts in cultural relations and perceptions always seem to tend toward the abstract and immaterial in their progression.

Interior architectural space conception also begins to change radically during the period of mechanization. In *Mechanization Takes Command*, Siegfried Giedion discusses the difference between medieval and nineteenth-century conceptions of space and spatial comfort. Spatial comfort in the Middle Ages, according to Giedion, was in large part determined by the unity of the proportions, materials, and form of the room's shell. Furniture was still large, cumbersome, and expensive, so it was uncommon to fill the room with small furniture objects as we do today. Because of this, these small objects were not a dominating factor in the perception of the room's spatial presence during the Middle Ages. The nineteenth-century conceptions of space, after having evolved for several hundred years during the age of mechanization, became defined much less by the plan and sectional volume and more by the objects within. The Industrial Revolution, with its fast, labor-saving production methods, has made smaller pieces of furniture (lamps, art objects, etc.) so attainable that there seemed to be a rush to fill spaces with them. Habitation areas no longer needed to be strongly defined spatial realms in order to elicit comfort. Space had become neutral, a backdrop for the smaller designed objects that began to dominate our lives. This phenomenological change in interior space conception is tantamount to the same trends taking place within other areas of culture. It seems standard that with the advance of technology and the replacement of hand power by machine power, a palliation of intricate interior spatial form occurs. By the middle of the nineteenth century, human perceptual comforts were no longer dictated by space that is bound in the physical. Through this evolution, we became accustomed to modes of creation that divorce the need for personal physical power and handcraft for object and even spatial production.

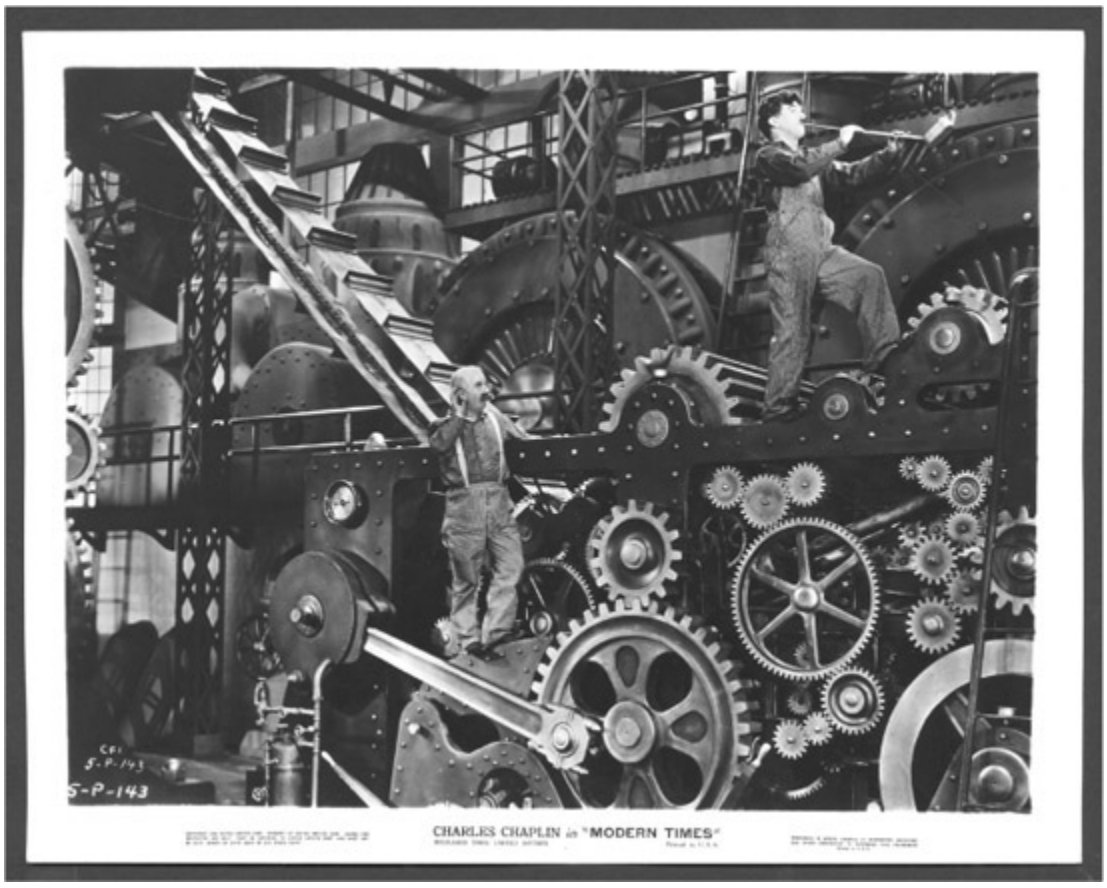

Figure 27.3 "Man in the Assembly Line", Leblond, Romuald, and Jessica Vaillat. Charlie Chaplin (1889–1977).

By the late twentieth century, industrial production had reached its zenith. Modes of production, and consequently modes of spatial perception, had undergone a total evolution from the spatial conceptions of the Middle Ages, some five hundred years earlier. The corporeal had become too heavy and burdensome; it could no longer keep up with the excitement for the lightened load of the new spatiality of mechanized culture. The Industrial Revolution, with the clock and the printing press as its progenitor and exemplar, in substituting manpower for machine power, had driven material sensibilities to the brink of the immaterial.

The rise of digital media: the third cultural register

It is not for the current generation to know the overall impact that the digital age will have on interior architecture and the culture that it serves, though past trends in industrial and technological development help give clues to the possible effects. Digital media is to the book today what the book was to the built environment in the fifteenth century. The rise of digital media has already begun to give rise to new forms of cultural production – and consequently new modes of space production and perception. The transitioning away from the book as a research mechanism, and the digitizing of mass quantities of information, is a direct and blatant effect of the transition of modes of expression toward digital means, a further dematerialization of cultural space.

Siegfried Giedion argued that in the nineteenth century, mechanization had succeeded in mass replicating symbols that had been historically rarified through a difficult means of production.[16] The result was that the original symbolic meaning was lost in the panoply, a dematerialization and devaluation of the symbols themselves. Eventually, the value within these symbols was no longer meaningful to the culture they were meant to communicate with, and so after lingering through the first phases of these new modes of production, they soon disappeared, giving way to new ways of thinking about the made object. A similar process may be occurring in contemporary culture, wherein ways of thinking about space that have been bound to ideas that originated within book culture are now beginning to disappear within a culture that is being infiltrated with an immediacy, rapidity, and constant newness that books cannot offer. The long-term effect of this, if it follows similar past trends, will be further dematerialization, until eventually the idea of material has been entirely severed from that which is physical. To use Giedion's words, material may soon be completely "torn out of the frame within which it once had meaning."[17]

An abundance of contemporary work explores (consciously or subconsciously) this emerging phenomenon. In fact, it could be argued that most contemporary critical practices have accepted or are celebrating forms of dematerialization in the design disciplines in one way or another.

Transarchitectures, for instance, explore the relationships between virtual and physical space.[18] Interactive surfaces are a direct and literal example of this phenomenon, wherein the wall as a static, physical artifact begins to deliver a deeper and more complex space than that of the physical interior itself. We've begun to expect more from the physical surfaces that surround us. Floor systems, for instance, that capture and store the energy created by human movement over the surface, are yet another example of a dematerializing of interior architecture; a conversion of the tactile into the overtly intellectual. Floors can no longer simply be a place to live or stand; what they deliver physically is now a given; their new value will arise from what they deliver virtually and intellectually.

More subtle examples of perceptual dematerialization exist as well. In projects like the Eberswalde Library by Herzog and de Meuron, the physical materiality of an exterior building surface disappears through a new graphic reading that hybridizes concrete and glass into a single unified envelope. Graphic surfaces have existed throughout the built environment's rich history; however, many contemporary examples seem to eliminate the physical material entirely in favor of the new depth of readability in the graphic itself. A multitude of examples like this exist in interior architecture, wherein a graphic field replaces what would otherwise be read as physical (and knowable) material. Spaces like VitraHaus by Herzog and de Meuron are yet another form of dematerialization. This project uses the typological "knowable house form" and suspends and stacks replicas of itself at odd angles so as to reduce its physical material reading and have the participant rely instead on a historical and intellectual understanding of this phenomenon. "House" is here being delivered as symbol; its grounding is no longer a physical or material phenomenon, but is instead purely intellectually and culturally rooted.

Finally, at a base functional level, the vast majority of building materials today are lighter and reduced versions of their former selves. So even when we do not aim to dematerialize, technologies are forcing our hands in this regard. Stone, once a hulking, thick structural mass, eventually became a moderately thick surface that relied only on itself for support.

Now, stone is an incredibly thin veneer supported by an often invisible building frame; this again is an evolving form of dematerialization.

None of this writing is meant to paint a grim picture of these new forms of reality. Instead, designers must be as conscious as possible as to what motivates their decisions and attempt to understand how those decisions will affect life and experience. To know where we stand and at what we aim, we must continue to probe the potential effects of digital design and production on spaces and on spatial conceptions. Transarchitectures and hypersurfaces are to be seen as continuations of the ceaseless evolution of architectural space conception and perception from the Egyptian and Greek temples to today. As tools have developed in such a way as to slowly divorce the corporeal aspects of the human body from the process of production, imagination has been victorious in shifting sensibilities away from a particular kind of awareness of material, toward an acceptance of the immaterial as a new purveyor of reality.

Notes

1 Victor Hugo, *Notre-dame de Paris*, trans. Alban Krailsheimer (Oxford and New York: Oxford University Press, 1993), pp. 192–206.

2 Siegfried Giedion, *Mechanization Takes Command* (New York: Oxford University Press, 1948), p. v.

3 Giedion, *Mechanization Takes Command*, p. v.

4 Siegfried Giedion, *The Eternal Present: The Beginnings of Architecture* (New York: Bollingen Foundation, 1964), p. ix, 349–398.

5 Edward Twitchell Hall, *The Hidden Dimension* (New York: Anchor Books and Doubleday, 1982), pp. 1–6.

6 Ibid.

7 Vincent Scully, *Architecture: The Natural and the Manmade* (New York: St. Martin's Press, 1991), pp. 39–64.

8 Lewis Mumford, *Technics and Civilization* (New York: Harcourt Brace and Company, 1934), p. 136.

9 Thomas Fisher, "The Past and Future of Studio Culture", *Arc Voices*, 15 October 2004.

10 Paul Shepheard, *What Is Architecture* (Cambridge, MA: MIT Press, 1999), p. 12.

11 Neil Levine, "The Book and the Building: Hugo's Theory of Interior Architecture and Labrouste's Bibliotheque Saint-Genevieve", in *The Beaux-Arts and Nineteenth-Century French Architecture* (Cambridge, MA: MIT Press, 1982), pp. 139–173.

12 Fisher, "The Past and Future of Studio Culture".

13 Lewis Mumford, *Technics and Civilization* (New York: Harcourt Brace and Company, 1934), p. 17.

14 Levine, "The Book and the Building: Hugo's Theory of Interior Architecture and Labrouste's Bibliotheque Saint-Genevieve", pp. 139–173.

15 Fisher, "The Past and Future of Studio Culture".

16 Siegfried Giedion, *Mechanization Takes Command* (New York: Oxford University Press, 1948), p. v.

17 Levine, "The Book and the Building: Hugo's Theory of Interior Architecture and Labrouste's Bibliotheque Saint-Genevieve", pp. 139–173.

18 Marcos Novak, "Transarchitectures and Hypersurfaces: Operations of Transmodernity", *Architectural Design* 68, no. 5 (1998): 84–93.

Chapter 28

Time travel

Interior architecture and the exhibition space

Anne Massey

Interior architecture is a relatively new discipline which aims to explore and account for the design, construction, and use of interior space. Situated between architecture and interior design, writing on interior architecture oscillates between the physical shell of the building and the look and feel of the spaces within buildings. As a subject and approach, it is situated between architecture and interiority. As Christoph Grafe outlined in his introduction to the *Interior Architecture* series:

> Interiors play a significant role in the patterns of changing use and meaning in contemporary cities. Often designed as short-term proposals in existing (and often former industrial or commercial) buildings, their designers are able to respond flexibly to larger developments on an urban and global scale, both following fashions and trends and establishing them … All volumes contain a series of critical articles … to illustrate both their place in the

history of design and the architectural solutions employed by their designers.[1]

Approaches to interior architecture, therefore, rely heavily on the concepts and historiography of architecture combined with methods of design history and the emerging field of interiors.[2] Some writing on interior architecture tends to gravitate more toward an architectural approach, as the new field of interiors is perceived as lacking the prestige of architecture. As Graeme Brooker and Lois Weinthal argue in the "General Introduction" to *The Handbook of Interior Architecture and Design*, "Historically the subject of interiors has been perceived as a marginal pursuit, mostly vocational in bias and lacking intellectual gravitas."[3] Thinking about how writing on architectural interiors is illustrated, there is a tendency to adopt the architectural convention of a freshly constructed, shiny new entity, usually without inhabitants in a fixed moment of time, everlasting and unchanging.[4] As Jeremy Till argues: "In freezing time, architects would have it that they can control time. It is a control that attempts to banish those elements of time that present a challenge to the immutable authority of architecture."[5]

In addition to the architectural obsession with the pristine, perfect interior with a focus on the finished project, there can also be a tendency to present a "before and after" linear narrative of interior architecture. This notion of the "new and improved" is endemic in design theory. There is a neatly defined design problem, and the professional designer can solve it just as neatly. From healthcare to environmental waste, the discipline of design and its critically naïve offshoot, design thinking, can solve the problems of the world. As Lucy Kimbell has argued, this relies on a simplistic view of the design process.[6] This chapter argues that a consideration of the interior, which looks not just at a single before-and-after moment but also at a plurality of befores and afters, will enrich the discipline. By acknowledging the dimension of time within interior architecture, the subject is opened up to new readings and interpretations introducing a broader understanding of social, political, and cultural contexts. Considering the passing of time, interior architecture is subject to a more critical reading of images and the

interiors they represent beyond styles, technical innovations, and authorial tropes. A consideration of temporalities supports a more critically engaged reading of the interior by adding a new dimension.

As a case study for this approach, this chapter will consider the same space and its use over sixteen years. The case study is the Institute of Contemporary Arts (ICA), 17–18 Dover Street in the West End of London. The ICA was founded in 1946 using the model of the Museum of Modern Art in New York; however, the founders (surrealist sympathizers Peter Gregory, Roland Penrose, Herbert Read, and Peter Watson) soon realized that the ambition to create a permanent collection was misguided and unrealistic. The founding committee came to the conclusion that they personally owned most of the modern artwork located in Britain at that time, as no public institutions were actively building up a collection of the avant-garde. The idea was to create a modern arts laboratory for exhibitions of art, design, film, literature, and photography. Moreover, the Institute aimed to stage discussions and concerts to foster an atmosphere of critical inquiry. The ICA succeeded in its aims and was the first institution in London to show leading artists such as Jackson Pollock, Leon Golub, and Andy Warhol, while providing the intellectual home for the Independent Group during the 1950s and 1960s. The exhibitions were usually visited by approximately 1,000 members, non-members, and students. The ICA organized twelve exhibitions annually with a host of associated events.

The new ICA spent some time searching for premises, holding its first events and exhibitions in the basement of the Academy Cinema on Oxford Street and the Burlington Galleries. The search for a new premises came to an end when, in early 1950, the first floor of a nineteenth-century townhouse was secured. The interior was remodeled by modernist architects Maxwell Fry and Jane Drew in 1950, and the upstairs former drawing room was used as an exhibition space and events venue throughout the 1950s and into the 1960s. It measured approximately 16 × 5.5 meters and was an exceptionally difficult space to house London's avant-garde headquarters.[7] How was the space occupied and changed with the rolling program of

twelve exhibitions annually? In addition, the ICA's public program was held in the same space. How was the stage and the audience accommodated?

This chapter draws on – but also presents – a challenge to exhibition studies, which does not take the spatial culture of the exhibition space sufficiently into account. The focus tends to be on the works of art themselves, the intertextuality of the exhibition as event, and the various networks of artists, curators, and visitors.[8] The writing is largely informed by research in the ICA archives held at Tate Britain. The images have been selected to evoke a certain atmosphere, allowing us to travel back in time.

An exhibit

This is the past, a photograph, an image, a fleeting moment frozen in time, never to happen again (Figure 28.1). One afternoon, on the first floor of a nineteenth-century townhouse near the Ritz, a split second is captured, unique and ephemeral. It was taken by the British artist Richard Hamilton during the installation of the exhibition *an Exhibit* one hot August day in 1957. It was a moment in London when everything seemed possible, the moment of mid-century modern, when art education was freely available in Britain, when new buildings in a new style were being built as part of a shiny new future. New styles of music, art, and design still shocked; new approaches to exhibition design still grabbed the attention of the gallery going public. Here are Perspex sheets arranged in the nineteenth-century space, challenging the imperial past of traditional London with its wrought iron, Juliet balconies, and French windows. Here was a new future in translucent plastic, hanging playfully over the period details, mocking the heritage of the building, adding a new layer of understanding and provocation, erecting new boundaries between past and present, then and now – the here and now. The shimmering sheets reflect the ornamental ironwork, the flagpole outside, the mellow stones of nineteenth-century London. The peace and apparent tranquility of London at the height of empire is now disturbed by new technologies, by a new generation noisy with provocation, armed with new materials and a new perspective. Time is

interrupted and the everlasting, secure order of neoclassical architecture challenged by this ephemeral installation – the exhibition. The boundaries between past, present, and future become blurred. We are on the edge between London as the imperial city and London as the site of modernity.

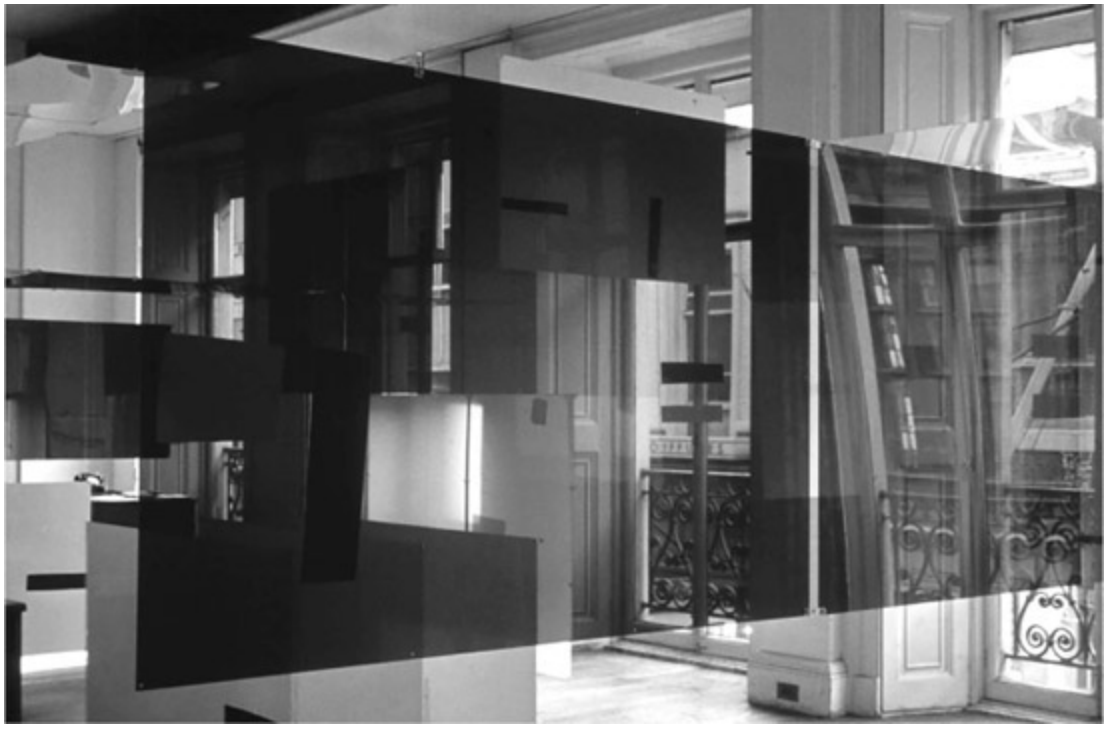

Figure 28.1 *an Exhibit*, installation shot, 1957, Richard Hamilton, ICA Dover Street, London

The exhibition, *an Exhibit*, was conceived by Lawrence Alloway, Richard Hamilton, and Victor Pasmore as "A populable art work."[9] It took place during August 13–24, 1957, and was planned to be a combination of a maze and a hall of mirrors. An environment was created for the gallery visitor to navigate as they wished, passing around and between the temporary boundaries erected by Perspex panels. The gallery, on the first floor of 17–18 Dover Street, in the West End, was a semi-private and semi-public space. It was a members' space, but visitors could buy a one-day membership. There was a members' bar, but a program of public events. The place of the exhibition was a sedate drawing room, remodeled using the *Theory of Games* and behaviorism to challenge the ICA gallery visitor. The

viewer was invited to enter a maze with temporary structures and no artworks, in a space with new boundaries created by translucent sheets.

The exhibition catalogue was a foldout A0 sheet printed on thin, translucent paper in red and black, which echoed the legacy of the Bauhaus, which Hamilton and Pasmore translated into a British context in their "Basic Design" course at King's College, Durham University, and now part of Newcastle University, the forerunner of the Foundation Course in Art & Design. When folded closed, the cover carried the name of the show, the three curators involved, the ICA logo, and a black rectangle inspired by Paul Klee and the Bauhaus. In the process of opening the map, the reader is introduced to "1. Preplanning decided on the rules of the game, to be called *an Exhibit*." followed by "2. *an Exhibit* as it stands, records one set of possible moves," and then "3. Visitors to *an Exhibit* are involved in a game: the game is the structure of the Exhibit." There is a self-conscious historicism in the text; the artists are writing for posterity and for the future archive. The visitors are invited to play a game, to explore boundaries between and across the disciplines of art and design, interior architecture, and exhibition installation.

an Exhibit brought together two artists and one art critic. The tightly knit group worked intensely on the project. The show was first erected at the Hatton Gallery and situated in Newcastle College. The concept was then brought to London, the link between curating and education slightly lost with the transposition from art school to art institution, but as art critic Lawrence Alloway, who was the diarist of the exhibition, argued:

> A fuller degree of physical participation than is obtainable with separate works of art tempts the constructivist to dream of public monuments. *an Exhibit* is a way of accepting the limited conditions of an exhibition and overcoming them to make a drama of space that involved the spectator.[10]

The Perspex panels were used in the available, standard dimensions of 1.2 meters by 0.6 meters, eight inches, and the curatorial team were not precious

about how the sheets should be arranged. The sheets used were in the commercially available colors of red, grey, black, and white and were hung at varying heights using nylon thread in a loose grid formation of 16 inches. They were ordered differently for the Newcastle and London shows and could be reinstalled in an endless distribution of divisions and boundaries to create a myriad of mazes to challenge the exhibition visitor.

Paintings from Haiti

This exhibition at the ICA in Dover Street opened in March 1951, and the installation shot reveals the same interior as *an Exhibit*, with the same long French windows and early-nineteenth-century fittings opposite the entrance (Figure 28.2). The similarities stop there. The paintings are hung on specially designed panels, designed by Jane Drew and Maxwell Fry "on the unit system so that they can be used singly in twos or to form groups of alcoves. The screens were double-sided and covered in blue fabric; they have individual adjustable light fitments and stand firmly on solid laminated legs."[11] Richard Hamilton, who installed many of the early ICA exhibitions, found the space a difficult one to work with:

> one of the problems of the ICA in the early days from the exhibition point of view was that the architectural features and style of the place really was not conducive to hanging pictures successfully … The screens that had been made were covered with blue felt … and the end walls were glossy straw which wouldn't take a picture. So most of the efforts after that were directed at removing all the disadvantages of the fact that the place had been turned into an exhibition gallery … and since there were such problems with the space and not really any hanging space, because the big problem with the ICA was not only the décor but the fact that one wall was entirely taken up with window.[12]

Figure 28.2 *Paintings from Haiti*, ICA (1951)

The paintings were hung awkwardly on the blue felt screens, ordered logically in a sequence determined by the windows to the right of the image. This was March 1951 in London, with a chill wind and rationing still in place. Members of the public were dressed in overcoats over their suits, guarding them against the cold. This was before the faint air of optimism offered by the Festival of Britain, which took place in the summer before Hamilton's *Growth and Form* exhibition and post-war reconstruction had made much of an impact. The floorboards looked bare; rubbish piled up to the left beneath the contemporary style table which doubled as an admissions desk. The gallery assistant organized the piles of information sheets and postcards against the backdrop of the brand new, straw-covered wall mentioned by Hamilton. To the left was the shelving and display

cabinets specified by Fry and Drew. Institutional, tubular steel chairs were grouped to the right of the image, perhaps left over from an evening event.

During the span of the exhibition from March 13 to April 6, 1951, a plethora of events took place in the space. The screens were moved into storage, and collector Mercedes Mackay discussed "The Indigenous Music of Nigeria" with examples of various instruments; the American choreographer Beth Dean discussed "Dances of Australasia-Aborigines of Australia," and there was dancing for ICA members led by Ernest Berk with music by Peter Ury and the Sholanke African Band. This was London facing the devastating effects of the Second World War and the transformation of the British Empire into the British Commonwealth before the more self-confident installation of *an Exhibit*.

Parallel of life and art

The low autumn sun shone through the familiar French windows onto a collection of unfamiliar images. This exhibition was staged two years after *Paintings from Haiti* and held from September 11 to October 18, 1953. It was installed by Alison and Peter Smithson, Nigel Henderson, Eduardo Paolozzi, and Ronald Jenkins. These exhibition organizers, or curators as they would be termed today, called themselves editors of the photographic images. The black-and-white photographs of diagrams, art works, missiles, insects, and vegetables were blown up and printed on card. They were then propped up against the wall, hung from the ceiling with fishing wire, or pinned to the walls. The group moved the Fry and Drew screens out for the exhibition, clearing the space to allow for a more uncluttered view of the exhibits. The straw finish at the end of the room was still in evidence, although hung with an assortment of images. The chosen images were designed to be experienced as a whole, as a total environment, and so the fewer impediments the better. The tubular steel chairs remained, as did the desk placed at the entrance with a telephone.

Throughout the later 1950s and early 1960s, the space continued to be used in the same way with a rolling series of exhibitions and events.

Changes in the avant-garde were reflected with the inclusion of performance events; Yves Tinguely orchestrated a "Cyco-Matic-Evening" in November 1957, when two cyclists rode through paint and then on a one-mile-long piece of paper in a race. In 1965, Mark Boyle asked the audience to take over the performance in a Brechtian moment that was to be immortalized in the film, *Oh What a Lovely Whore!* Boyle also designed the light show for the ICA's moving out party in December 1967, when the progressive rock band Soft Machine played. The ICA, with the help of Jane Drew, had been seeking new premises for nearly four years and the deal to move to its present location on The Mall took two years of delicate negotiations. The ICA had now outgrown Dover Street, as *Art & Artists* observed: "The Institute of Contemporary Arts, in its cramped Dover Street pad for the last twenty-odd years, had begun bursting at the seams."[13]

The new location, designed by John Nash, offered extended gallery space, a cinema, and a theater with superior office accommodation overlooking Green Park and views of the Houses of Parliament. The change of venue created a new phase in the history of the ICA, with the older generation of surrealists and modernist supporters slowly withdrawing and a new generation of more obvious political activists taking the helm, led by the theater impresario Michael Kustow. For many years, the ICA regarded itself as a brand new organization and rarely looked to its past. However, with the more recent curatorial interest in history in the now, the ICA under the leadership of Gregor Muir has enjoyed visiting its past. He collaborated with this author on *ICA 1946–68* (ICA, London) published in 2014 and a series of archival displays which showcase past ICA exhibitions. This impetus also led to the ICA revisiting its original Dover Street premises, now occupied by high-end fashion brand *Comme des Garcons*, and installing facsimiles of its archival remnants there. Inserted between and above the haute couture clothing were 1950s private view cards and blown-up ICA bulletin covers (Figure 28.3). The ICA once again managed to insert itself into Dover Street, and a new temporality was born.

Figure 28.3 *Parallel of Life and Art*, ICA (1953)

Image credit: author

Notes

1 Christoph Grafe in Tom Avermaete and Anne Massey, eds., *Hotel Lobbies and Lounges: The Architecture of Professional Hospitality* (London and New York: Routledge, 2013), p. 2.

2 See the journal *Interiors: Design, Architecture, Culture* published by Berg from 2010 and Taylor & Francis from 2015 for an informative cross-section of articles by the leading practitioners in the field. See also Graeme Brooker and Lois Weinthal, eds., *The Handbook of Interior Architecture and Design* (London: Bloomsbury, 2013).

3 Graeme Brooker and Lois Weinthal, "General Introduction", in *The Handbook of Interior Architecture and Design*, ed. Graeme Brooker and Lois Weinthal (London: Bloomsbury, 2013), p. xvi.

4 See Anne Massey, "Ephemeral", in *Interior Wor(l)ds*, ed. Luca Basso Peressut, Imma Forino, Gennaro Postiglione, and Roberto Rizzi (Torino: Allemandi University Press, 2010), pp. 161–165.

5 Jeremy Till, *Architecture Depends* (Cambridge, MA, and London: MIT Press, 2009), p. 79.

6 Lucy Kimbell, "Rethinking Design Thinking: One", *Design and Culture* 3, no. 3 (2011): 285–306.

7 Anne Massey and Gregor Muir, eds., *ICA 1946–68* (London: ICA, 2014), p. 38.

8 See Bruce Altshuler, *Salon to Biennial-Exhibitions That Made Art History, Volume 1: 1863–1959* (London: Phaidon, 2008).

9 Massey and Muir, eds., *ICA 1946–68*, p. 184.

10 Lawrence Alloway, "*an Exhibit*: Richard Hamilton, Victor Pasmore, Lawrence Alloway", *Architectural Design* (August 1957): 789.

11 Caption on back of photograph, RIBA Picture Library, APEXH1/76.

12 Richard Hamilton, interviewed by Dorothy Morland, undated, c1977, p. 6. Collection Massey.

13 "Briefly", *Art & Artists* (January 1968): 3.

Chapter 29

Productions

Spatial practices, processes, and effects

Clay Odom

For many speculative, interiors-focused design practices, traditional concepts of form generation, formal planning, and arrangement have become secondary considerations in their fundamental agency to produce spatial effects and atmosphere (Figure 29.1). How and when did questions of space and effect become important to contemporary design practices – not as a byproduct, but as a focus? Simply put, contemporary spatially oriented practices that work through iterative, distributed projects tend to generate interiorities that are not discrete, temporally frozen responses, but multivalent systems, ongoing spatial effects, and atmospheric productions. These practices (ranging from interior design, architecture, and installation art to hybrid art/interior architecture) challenge preconceived notions of the interior by their very fixation on the production of space and ephemera. Although disciplinary and transdisciplinary practice is an area of critical concern today, this investigation focuses on spatialities as broad conditions for consideration. Therefore, we will not make clear distinctions or draw clear disciplinary boundaries between these effects-oriented practices.

Exploring critically driven spatial practices, where generation of space and effects within, on, and between what are the increasingly unknowable forms of the urban, interior environments may be most readily engaged – productions as both processes and ongoing, generative outcomes become primary conditions for consideration. The notion of productions, however, also begins to circumscribe what could be seen as simultaneously fundamental and exploratory forms of contemporary cultural creation. Immediacy and subjectivity certainly begin to outline qualities generated through productive processes, but qualitative outcomes need not overwhelm a depth and rigor of approach.

The notion of "productions" as artificial constructs has certainly been a core aspect in the development of landscape architecture, theater, and film. These more generative, production-based processes yield a range of material and ephemeral conditions that offer aspirations for other spatial practices. Critical questions and uneasiness with productions as generated conditions, or, pejoratively, as "superficial" concerns, are outlined effectively in the first sentence of Robert Venturi's manifesto, where he states, "I like complexity and contradiction in architecture. I do not like the incoherence or arbitrariness of incompetent architecture nor the precious intricacies of picturesqueness or expressionism."[1] There is validity in a critical engagement with questions of ephemerality, materiality, designed objects and environmental productions. To address such uneasiness, it is *what* design processes produce that matters.

Figure 29.1 Emergent lighting effect, called a caustic, generated by the diagram-driven collaboration between material and form deployed through operational methods within an existing context in the project Tesseract 3.0 by Clay Odom

Production-oriented practices

> Sensuality has been known to overcome even the most rational of buildings. Architecture is the ultimate erotic act. Carry it to excess

and it will reveal both the traces of reason and the sensual experience of space. Simultaneously.[3] (See Figure 29.2.)

Today, we see a proliferation of temporal, ephemeral, and exploratory projects generated by what we will call production-oriented practices, or POPs.[2] The innovative and challenging projects generated by POPs emerge out of contemporary cultural conditions (a post-9/11, globalized, market-driven, urbanizing and interiorizing world), but also are results of a continuum of radical conceptual and theoretical projects produced in the 1960s (from Reyner Banham to Superstudio, for example) dealing with form, atmosphere, and technology. Archigram and Superstudio are still exciting when viewed through this lens, because the approach that they leveraged is incredibly similar and the potentials are pertinent to POPs. The broad potential of their work (as a reference entangling the spatial and formal with the rational and the contextual) are valid. "This was Archigram's super-modernist aesthetic and its avant-garde ethic: to promote a world of perpetual becoming. Endless permutations of existing forms or extreme outcomes for established methods were to be discovered."[4] Projects produced by POPs in the last ten to fifteen years, as evidenced in the work of Olafur Eliasson and Anish Kapoor, tend to engage temporality and atmospheric ephemerality, as well as issues of object formation and surface articulation. Ultimately, a fundamental dialectic between the production of objects and production of effects sets the basic tension between preconceptions about theoretical and conceptually driven approaches, the actualities of making, and the capacities of design and making in tandem. The vacuum between these poles may be engaged as a space where speculative, critical practices may claim territory, and where systematic approaches to design from concept through actualization may be leveraged. To fully claim this elusive territory, the range of processes, and products of those processes, must be interrogated as being fundamental to production-oriented practices.

In his essay "Arguing for Elegance," Patrik Schumacher inadvertently helps to position the work of practices such as POPs, stating, "innovation involves more than radical newness. Mutation is to be followed

by selection, recombination, and refinement before the avant-garde can release its results to mainstream reproduction."[5] Schumacher goes on to state:

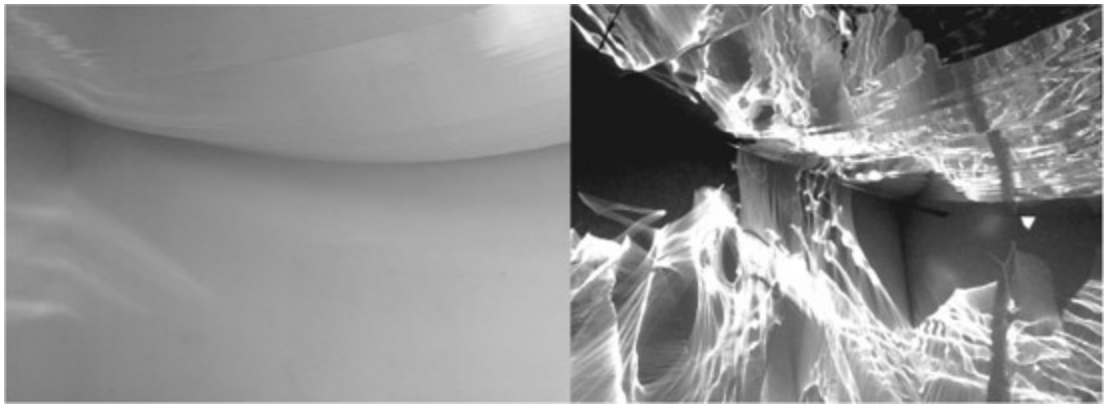

Figure 29.2 (Left) material spatial condition, and (right) the full system engaging material, space, technology, and lighting. These effective conditions serve to obscure and even supersede formal intervention and existing interior conditions. From the project Tesseract 3.0 by Clay Odom.

> At this juncture the protagonists involved typically bifurcate into two distinct groups with two quite different career trajectories: those who go mainstream together with the innovations they contributed to, and those who stay within the domain of the avant-garde to move on into further unknown territory.[6]

As speculative, spatial practices that are not form-centric, POPs are built upon developing process-driven, systemized, and iterative relationships between material, technological, and spatial effects; they develop a new type of rigor. In becoming focused more on processes realized through patterning material, space, and sequence, this new practice becomes tuned to subjective conditions; the role of people and experience in design becomes primary. For POPs, and the processes that afford for their creation, critical engagement and iterative development are both creative and generative. Here, the system includes material technical components and the organization of these components: the installation, the generated effects, the emergent conditions, and the human experiences combined into one.

Situating productions

In writing about what could be called an entanglement of effects and form found in the work of seminal practice, Herzog and de Meuron's (entanglements understood here as Venturian contradictions), Jeff Kipnis seeks to reconcile rigorous planning and form production with surface and atmospheric effects in what he described as "The Cunning of Cosmetics".[7] The very framework of this chapter, as well as its timing at the beginning of contemporary production-oriented practices, recapitulates the dialectical tension between what is traditionally the domain of design preoccupation (the object) with a growing focus on the manipulation of the surfaces of form and the production of effects. This shift seeks to make sense of effects and processes, while positioning them within the larger context of design and architecture. It is a critical question to the development of contemporary spatial practices as described above.

To accomplish this turn toward productions (of space, atmosphere, surface, and even contemporary investigations of glamour) design processes and design outcomes in the form of materials, codes, criteria, atmospheres, affects, and effects must be intertwined as Kipnis suggests. Buckminster Fuller, who many consider the father of the 1960s radicalism noted above, famously asked, "How much does your building weigh?" This exquisitely simple question forced architects and designers to critically question the very processes of design that they had come to take for granted. It also generated even more fundamental questions regarding the role that objects play beyond themselves in connection to broader ecologies. These questions forced designers to critically reconsider objects' relationships to the world beyond including makers, designers, and materials, and even the markets that drove their creation. This question is still valid. For contemporary designers engaged in the world of spatial production, the question might be rephrased into, "What does your work produce?"[8]

Describing the trajectory of the development of production-oriented practices, from planning to form to space to effect, is the

fundamental question that helps to define productions and to situate the work of POPs with regard to larger trends in spatial design.

> In other words, technocultures do not abolish one another in clean or comprehensive ways. Instead, new capacities are layered onto older ones. The older technosocial order gradually loses its clarity, crumbles, and melts away under the accumulating weight of the new.[9]

Some five years after Kipnis's 1997 essay on "The Cunning of Cosmetics" and some thirty-seven years after the seminal work *Complexity and Contradiction in Architecture* was published (at the beginning of what Mario Carpo has recently described as the "second digital turn", and probably the antecedent for POPs), Gregg Lynn mounted the exhibition *Intricacy* at the Institute of Contemporary Art at the University of Pennsylvania. In the exhibition catalogue, Lynn states, "the term intricacy is intended to move away from … understanding of the architectural detail as an isolated fetishized instance within what is an otherwise minimal framework."[10] As we move forward to today, we can begin to see that the issues are now moving through Lynn's *Intricacy* of form and surface production into a new territory, where the production of space and spatial effects are the focus of the work. More directly, contemporary projects, such as Olafur Eliasson's *Feelings Are Facts* or Tomas Saraceno's *On Space Time Foam*, are beginning to leverage form and surface not only for their own intrinsic qualities, but also for the ephemeral effects and experiences that they have the capacity to produce. The escape velocity needed to generate this trajectory of design's movement from objects to space was reached due to the expansion of digital tools and techniques, access to low-cost hardware, and – most importantly – the proliferation of installations as a typology of work where advanced spatial practices can be tested, evaluated, deployed, sampled, and redeployed.

Production precedents

> Despite the use of the term as neodeterminist jargon today, performance in architecture is closer to theater and music than to science or engineering, as much if not more a question of elusive qualities than of measurable effects.[11]

Two works that can be understood as early manifestations of the "elusive qualities" of productions generated by POPs is perhaps most clearly seen with Diller-Scofidio's Blur Building completed for the 2002 Swiss Expo and Anish Kapoor's *Cloud Gate* completed for Chicago's Millennium Park in 2004. Certainly, these conditions are also seen in the work of Christo, and more recently in artists/architects such as Olafur Eliasson, Numen/For Use, and Tomas Saraceno, to name a few. Considering the potential of effects, both generated by and entangled with other conditions through patterning processes, rather than selected and applied hierarchically, allows POPs to explore concepts from other fields related to the implications and productions of materials and surfaces. In *Cloud Gate*, Kapoor leverages form and material integration not as ends, but as means of producing new situations and effects within the city. This work is production-oriented because it extends geometric material methods of generating spatial and atmospheric effects from his previous work such as *Marsayas*, or even earlier student drawing studies, dealing with complex geometric transformations that "confound spatial perception."[12]

Even if productions are fundamentally transient and ephemeral in many ways, their realities are what drives them within production-oriented practices. Projects such as the aforementioned Blur Building and *Cloud Gate* are diagrams for productions of ephemerality and experience. We can also begin to trace this desire for the production of effects within the historic interior. The religious and cultural constructions of the Greeks and Egyptians or the projections of political power of the Hall of Mirrors at Versailles offer examples. These may be seen in the atmospheres of proto-modern artists such as Whistler and Turner. In these examples, productions

are edgeless, yet particular conditions which proliferate. Ultimately, they are effects producing conditions that either contain edges and borders or generate edgeless, fluctuating territories. Today, contemporary art installations, scenography, and temporary interior interventions are of particular interest because they have become the most accessible territories for emerging methodologies to be tested. Rather than focusing on mediation and problem solving as the end goals of design, this work begins to generate a range of potential conditions.

In Graham Harman's exposition on Bruno Latour, for example, he notes,

> For Latour there are no cryptic essences lying behind… . There are only actants of all possible and actants are fully expressed in each moment … it is true that new features of objects appear through the unfolding of successive events.[13]

Engaging in acts and processes of design that are both rigorous and loose in terms of contextual specificity allows for projects to exhibit both autonomous effects and contextual connectivity. This is a crucial understanding. For example, where a project is literally connected to an existing building or other contextually specific condition, the concept of connectivity is realized materially. Leveraging this connectivity allows for other moments of disconnection or autonomy from the existing to emerge. Within Tomas Saraceno's *On Space Time Foam*, moments away from contextual connection are conditions where surface and spatial effects are maximized. When these emergent conditions are aligned more intentionally with material considerations, other types of effects may also begin to emerge. Furthermore, this work can be seen as one in a series of iterative projects completed across of range of sites and times using similar methods and materials.

Other examples from artists, such as James Turrell, and Donald Judd's *100 Boxes in Mil Aluminum*, exhibit how an approach to design may be fixated on the production of spatial, optical, and experiential effects by

means of entangled geometries and materials. In the work of process-based artists, such as John Cage, or contemporary artists engaging systems like Julie Mehretu, we see how rigorous processes organize material and forms, while allowing for a broad range of new conditions and effects to emerge. Examples of this thinking in speculative work of contemporary architects includes Nader Tehrani, Neri Oxman, and Jenny Sabin, and also contemporary scenographic projects by designers such as Robert Lepage. Their work, and the work of like-minded designers, deals with material and formal organizations, as well as a range of effects generated by material, formal sequencing in service of environmental and even ornamental effects.

Within POPs and their referents, spaces and atmospheres are driven by collaboration between form and surface that reflect and transmit light, while also creating moments and passages for people to move through or pause within experientially. Moving back to the example of Saraceno's *On Space Time Foam*, form and material merge to generate places for people and the sense of weightlessness and visual effects of floating. One may make connections between how materials, spaces, and people are brought together to mediate between them with the outcome being a total environment. These productions are inherently spatial, affiliative, productive, and not directly tied to stylistic conceits, but rather as functions facilitated by diagrammatic, active entangling. This may allow designers to move fluidly between these processes and outcomes to "negotiate a field in which the actual and the virtual assume ever more complex configurations."[14] In this way, the work extends on what Gernot Bohme described as the basic understanding of the effect of atmosphere and how "we are not sure whether we should attribute [effects] to the objects or environments from which they proceed or to the subjects who experience them."[15] The totality of the system including individual visitors and interactive, informative components – whether simply a spatial sequence, spatial proximity to material, or active user-generated manipulation or manipulation via sensors – expands the system and intertwines constituencies into a coherent, if not completely self-aware, ecology.[16]

As Jane Bennet proposes in a critical essay on the aesthetic philosophy of object-oriented ontology (also known as OOO) developed by Graham Harman, "it is unfortunate to simply decouple the object from its productions as it is to limit the role of subject and object as a dialectical condition, rather than a linked one."[17] Bennet's critique reveals the flaw of the object/production dialectic position. The affiliative and productive potential of an active ecology of design processes and design productions allows for critical engagement with the world, rather than estrangement from it. This entanglement produces effects ranging from the programmatic (or proto-programmatic) to the aesthetic and material. The system simultaneously seeks multiple resolutions, rather than a singular condition defined as a "solution." This allows for constant and ongoing actions of design to become fundamental as a holistic, proliferating set of systematized generative processes.

> Operational, combinatory, and organizational logics of transformation embedded within patterning (such as repetition, scaling, rotation, overlapping, separating, joining, cutting, and pasting) become tested and explored as graphic, spatial, and programmatic organizing tools. As a transformational tool, patterning is a diagrammatic approach that generates possibilities for relating and sequencing form, material, space, and effects. Patterning has the ability to be manifested and explored through a range of techniques from parametric modeling to analogical installation. In this fluidity, it finds strength as a contemporary design method. Due to this fundamental diagrammatic state, it is a process untethered to a particular software or fabrication technique. In fact, this peculiar quality allows it to move with agility across technical modes of production. It is inherently digital, as we see in the following examples, and it may also be enacted through purely analogical means.[18]

As Ben van Berkel has stated, "a diagrammatic practice pursues a proliferating, generating, and open instrumentalization," and this type of practice generates fundamentally new conditions.[19] Developing production-oriented design methodologies through iterative, diagrammatic, code-based processes, the potential of contemporary global connectivity and transcontextual explorations are being developed by POPs.

Words such as "ephemeral" or "phantasmagoric" are often used to describe the transitory or elusive effects manifested by these contemporary production-oriented practices (Figure 29.3). We must then ask a set of questions. Are these productions contingent or autonomous to the systems that produce them? By extension, how is form produced, articulated through material, color, and finish, and then leveraged to produce (trigger, create, sponsor, and stimulate) a range of effects of space, light, and atmospheres? Can effects such as atmosphere be used to manipulate and explore form, surface, and materiality? Too often, attention is focused on the ephemeral as having no material implications.

Tracing a trajectory from the production of effects through engagements with material, surface, finish, and form toward a production of form through the manipulation of effects engages a type of expanded performance. Through projects and practices entangling effect, form, and material, POPs are engaging issues associated with the interior and emerging strains of interior design and art considering the implications of objects and materials as generators of effects. In an interview with Charlie Rose describing his work on Milstein Hall at Cornell University, Rem Koolhaas stated, "performance is not function. What role does the building play and what kinds of scenes does it trigger? … What does it create? What does it sponsor? And what does it stimulate?"[20] When Koolhaas's typically provocative statement is interrogated further, we can move beyond limited notions of building to questions of making, and ultimately to questions which are focused on the nature of objects themselves, what they produce, and the processes that produce them. Koolhaas's more recent works, such as The Prada Foundation in Milan, are rife with effects of material and form ranging from mirroring operations to optical mirrors. This work itself is a

testament to its ability to be classified as production-oriented. That the Office of Metropolitan Architecture is engaged in projects like this further clarifies that it is, indeed, an area that deserves the attention of designers, theoreticians, and historians.

Situating contemporary practices that exhibit tendencies for ongoing explorations of speculative design processes, production-oriented design practices may be positioned in the breach between contemporary theoretical references from the work of Gernot Bohme (Atmospheres) and Graham Harman (object-oriented ontology).[21] The dialectical attitude toward the relationship between producer and produced, between the objective and subjective conditions of this work, may be useful in developing serial diagrams of potentiality, but ultimately the work must be positioned on an interactive, oscillating continuum. This environmentalism is the ultimate understanding that allows the work to be developed and leveraged; negotiating processes and products generates conditions that supersede constituencies of the system to produce wonder. One deeply interesting aspect of productions is that they gives us a tangible, if ephemeral, way of understanding design that allows us to make clear judgements about both process and products of design. The directness is still not completely objective – nor should it be – but it does provide for a rigor of engagement that may be useful to both designers and those of us who live within designed conditions every day.

Figure 29.3 Temporal set of images showing interaction with the work as both a spatial and material conditions designed in project Tesseract 4.0 by the author. Below a set of temporal changes in the production of lighting effects. Installed at The RMIT Design Hub as part of the exhibition "Situation," Aug 2014.

Ultimately, the pull between producer and produced sets the basic tension for contemporary spatial design practices. This tension is becoming a productive rather than problematic condition. It is generated in spaces between preconceptions about theoretical and conceptually driven

approaches, the actualities of making, and the productive capacities of design and making in tandem. Through an understanding of productions, however, the vacuum between these poles may be engaged as a space where speculative, critical practices (such as POPs) may claim territory. This is a condition where systematized approaches to design from concept through to actualization may be leveraged. Finally, to fully claim this elusive territory, POPs must interrogate the range processes and products of those processes as being fundamental to speculative interior practices. These productions are spatial, affiliative, generative, and not directly tied to formal stylistic conceits; rather they function through diagrammatic, active entangling of objects and effects through processes. This understanding may allow designers to move fluidly between processes and outcomes to "negotiate a field in which the actual and the virtual assume ever more complex configurations."[22]

Notes

1 Robert Venturi, *Complexity and Contradiction in Architecture* (New York: The Museum of Modern Art, 1966), p. 16.

2 POPs (production-oriented practices) is used here to describe spatial design practices, methods, processes, and pedagogies whose intention is to generate multiplicities of outcomes. POPs are those which extend through and between academic and professional practice. And here we begin to understand that this mode of practice becomes focused not on the creation of discreet solutions, but rather on leveraging dynamic processes to produce a maximum range of effects and affiliations. These productions become the conditions through which new projects are conceptualized and generated. Speculative practices may be seen as exhibiting the following: 1. POPs maximize productions (of effects of form, surface, space, experience, atmosphere, and programmatic potential, for example) by leveraging processes. 2. POPs are projective and open, meaning they are not focused primarily on the view that design is a discreet "problem-solving" exercise. 3. POPs are affiliative, meaning the processes and the productions seek and generate relationships. 4. Speculative practices are collaborative; they seek transdisciplinary connections and understand potentials of linking diverse ranges of connection. 5. POPs are extensive, meaning they seek conditions to test processes that may fall outside of traditional disciplinary

boundaries. 6. POPs ultimately may generate more normative professional practices or projects, but that is not their fundamental goal.

3 Bernard Tschumi, *Architecture in/of Motion* (Rotterdam: NAi Publishers, 1997), p. 107; Simon Sadler, *Archigram: Architecture Without Architecture* (Cambridge, MA: MIT Press, 2005), p. 47.

4 Simon Sadler, *Archigram: Architecture Without Architecture* (Cambridge, MA: MIT Press, 2005), p. 47.

5 Patrik Shumacher, "Arguing for Elegance", in *Elegance*, ed. Helen Castle, Guest-ed. Ali Rahim and Hina Jamelle (*Architectural Design*/AD, 77, no. 1 [January/February 2007], p. 30).

6 Shumacher, *Elegance*, p. 36.

7 Jeffrey Kipnis, "The Cunning of Cosmetics", in *Herzog & de Meuron: El Croquis 84*, ed. Richard C. Levene & Fernando Marquez Cecilia (Madrid: El Croquis, 1997).

8 I first make this assertion in the online article "Tesseract Series" suckerPUNCH Daily, 6 February 2015, www.suckerpunchdaily.com/2015/02/06/tesseract-series/#more-38440

9 Bruce Sterling, *Shaping Things* (Cambridge, MA: The MIT Press and Mediawork, 2005), p. 14.

10 Gregg Lynn, *Intricacy* (Philadelphia, PA: University of Pennsylvania/Institute of Contemporary Art, 2003).

11 Jeff Kipnis, *A Question of Qualities: Essays in Architecture* (Cambridge, MA: MIT Press, 2013), p. 2.

12 Donna De Salvo, "Making Marsayas", in *Marsayas*, ed. Donna De Salvo and Cecil Balmond (Tate Publishing, 2002), pp. 10–12.

13 Graham Harman, *The Prince of Networks: Bruno Latour and Metaphysics* (Melbourne: Re-Press, 2009), p. 47.

14 Stan Allen, "Diagrams Matter", in *Diagram Work: Data Mechanics for a Topological Age*, ed. Cynthia E. Davidson, with guest editors Ben Van Berkel and Caroline Bos (ANY 23, 1998), p. 17.

15 Gernot Bohme, "Atmosphere as the Fundamental Concept of the New Aesthetics", *Thesis11* 36 (1993): 113.

16 Clay Odom, "Mobile Processes, Transient Productions: Nomadic Spatial Practices", in *Nomadic Interiors: Living and Inhabiting in an Age of Migrations*, ed. Luca Basso, Marco Borsotti, Imma Forino, Pierluigi Savadeo, Jacopo Leveratto, and Tomaso Longo (Cambridge, MA: MIT Press, 2015). This section of text was examined first in a paper presented at the Interiors Forum World Conference in Milan, Italy, in 2015.

17 Jane Bennett, "Systems and Things: A Response to Graham Harman and Timothy Morton", *New Literary History* 43, no. 2 (Spring 2012): 226.

18 Clay Odom, "Patterning Entanglement", *Applied Geometries, International Journal of Interior Architecture + Spatial Design*, v3, ed. Jonathon Anderson and Meg Jackson (Houston: ASD Publications, 2014), p. 12; note: this work is also expanded in an Interior Design seminar titled *Patterning: Diagrams, Sequences and Systems* taught at the University of Texas School of Architecture.

19 Ben van Berkel and Caroline Bos, "Interactive Instruments in Operation: Diagrams", in *Olafur Eliasson: Surroundings Surrounded, Essays on Space and Science*, ed. Peter Weibel (Cambridge, MA: MIT Press, 2001), p. 84.

20 Rem Koolhaas, interview with Charlie Rose, 19 October 2011, www.archdaily.com/182642/rem-koolhaas-on-charlie-rose/

21 Gernot Bohme's seminal work "Atmosphere as the Fundamental Concept of a New Aesthetics" and Graham Harman's work "Tool Being" are positioned here as setting the stage for the dialectic between Atmospheres and Objects, where the concept of Productions and Production-Oriented Practices is developed.

22 Allen, *Diagram Work*, p. 17.

Part six

Materialities

Chapter 30

“Living” rooms

The hypernaturalization of the interior

Blaine Brownell

The vision of a structure embodying the full attainment of mechanization signified the ultimate separation between a synthetic interior environment and the natural world beyond. Le Corbusier’s well known 1923 aphorism, “Le maison et une machine à demeurer” or “the house is a machine for living,” called attention to the opportunities enabled by the industrialization of architecture. At the time, total mechanization was a highly desired aspiration for architecture, made possible by the tools and effects of industrialization. Nearly a century later, the design and construction fields are changing course in response to a new global influence: the rapid convergence of technology and the natural sciences. Architects harness the principles of fluid dynamics to make cooling shelters, engineers create living facades composed of algae, artists make building blocks from microbes, and designers fashion furniture from fungus. Innovative thinkers in these and other disciplines seek a closer relationship with nature to advance work within their fields. In addition, a deeper knowledge about natural systems

and processes is considered critical to making responsible environmental choices in design.

Today, Le Corbusier's axiom would be that the house is not a machine for living, but rather a living machine, insofar as architecture has become a testbed for the application of natural materials and phenomena to create animate, responsive, and sentient surfaces and spaces. Interior environments are increasingly shaped by smart materials, active monitoring and sensing systems, occupant-attuned environmental technologies, and planted living surfaces. As material technologies and applications become increasingly lifelike, they promise to transform the fundamental character of the designed environment. This transformation points to a hypernatural condition, a state defined by the aspiration to extend, amplify, or transcend natural capacities by partnering with nature in a focused and intensified manner.[1] This chapter explores a range of possible intersections between interior architecture and the natural sciences, evaluating biological as well as nonliving (e.g., chemical) materials and processes. These intersections are framed according to three general approaches that designers use to explore hypernatural design: properties, which relate to the structure and composition of elements; processes, which concern methods used for construction; and phenomena, which describe transformational and responsive qualities in design.

Properties

Properties pertain to the fundamental composition and structure of elements, including their inherent physical and chemical attributes. These qualities may be static or dynamic based on the elements' intended purpose. When designers and architects consider the properties of design elements in a rigorous and sensitive way, they can create interior architecture that is more attuned to scientific principles.

One strategy is to embrace the ability of natural systems to use resources effectively while enhancing user health and satisfaction, an approach Carnegie Mellon architecture professor Vivian Loftness calls

"environmental surfing."[2] For example, interior vegetated surface systems employ oxygenating plants' intrinsic capabilities to purify air. In a vertical interior living wall developed jointly by CASE (Center for Architecture Science and Ecology) and SOM, hydroponic plants absorb interior toxins through their exposed roots, meanwhile releasing beneficial oxygen for interior occupants. The Active Phytoremediation Wall System (AMPS) includes low-power fans that accelerate the toxin-absorbing potential of the plants.[3] Other natural "surfing" approaches include power harvesting from light or kinetic energy. Recently developed photovoltaic technologies can convert light from indirect and electric sources, making them suitable for interior applications. These technologies include biodesign materials, such as Cambridge University's moss powered biophotovoltaics or designer Julian Melchiorri's *Silk Leaf*, via chloroplast's inherent capabilities.[4]

In addition to performative characteristics, properties may also pertain to the innately robust structural qualities of natural systems. Some designers experiment with the scale of natural structures to create novel design applications with unexpected visual effects. For example, Smith Allen's *Echoviren* reinterprets the cellular composition of the sequoia tree at the scale of a building module.[5] The firm 3D printed some 600 modules using a biodegradable PLA material – thus also employing the inherently biocompatible properties of the cells – and aggregated them to create an interior room within a forested site. Sabin + Jones LabStudio's *Branching Morphogenesis* is another example of a scaled structure – in this case, a polymer curtain inspired by lung endothelial cell tissue.[6] Another example is the University College London Bartlett School's *Augmented Skin*, wood-reinforced concrete modules that resemble collections of arthropod appendages.[7]

A particularly promising realm of investigation concerns animal architecture, or structures created for the habitation of non-human species. The spatial and dimensional principles of animal architecture may be embraced to create resource-efficient constructions with compelling visual qualities. For example, MATSYS' *Chrysalis III* is a parametrically designed installation that investigates the efficient packing capabilities of sea

barnacles with irregular sizes[8] (Figure 30.1). Other examples are designed to support actual occupation by living animals and insects – particularly beneficial species whose populations are under threat. University of Buffalo's *Elevator B* is a tower pavilion designed to house a beehive, with space below for human visitors to occupy the structure and witness the insects' activities.[9] The University of Minnesota's *Artificial Thicket* is a dense, multidimensional wall composed of reclaimed driftwood, designed to support bird and insect populations along the ecologically critical Mississippi River corridor.[10]

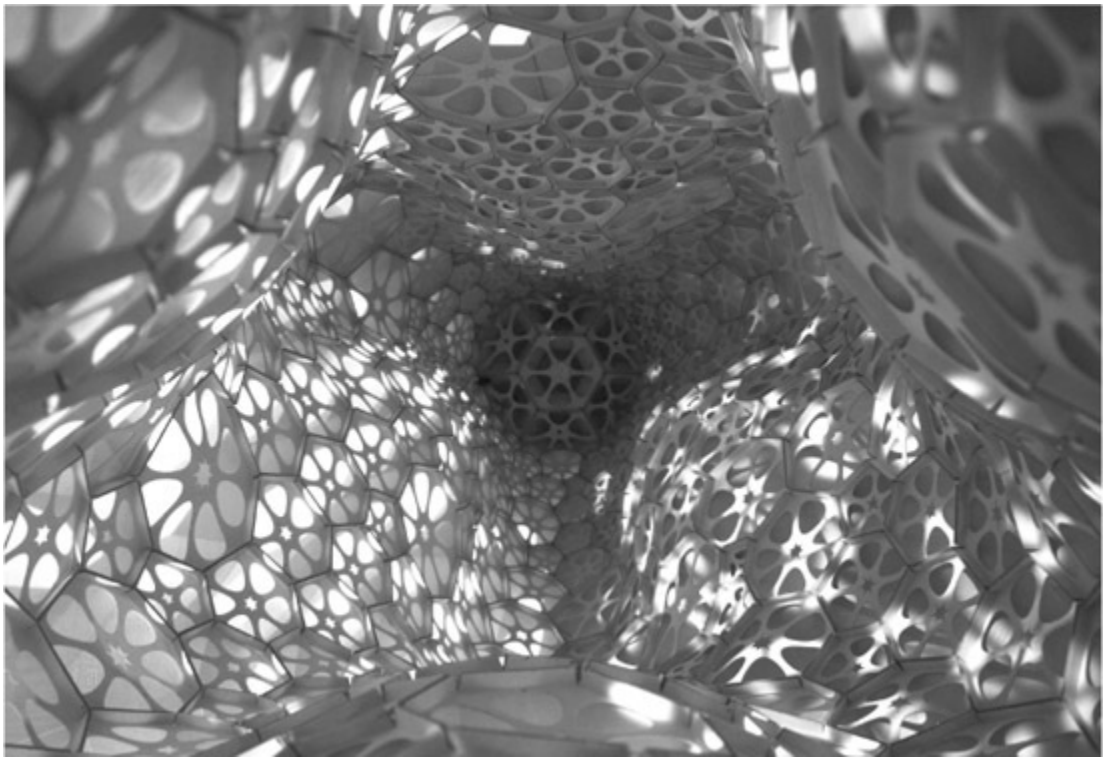

Figure 30.1 *Chrysalis III* by MATSYS

Image credit: MATSYS

Another way properties may be employed is to structure natural knowledge, such as creating interior architecture attuned to the purposes of archiving and exhibiting collections of important natural artifacts. Heatherwick Studio's *Seed Cathedral*, the United Kingdom pavilion at the

Shanghai World Expo in 2010, was designed to be an occupiable and spatially cohesive seed bank.[11] The 6,000-square-meter structure was composed of 60,000 transparent acrylic rods, each of which contained the seed of an important plant specimen embedded within its tip. These specimens were collected from the Kew Gardens' Millennium Seed Bank Project in Surrey, United Kingdom, the largest off-site plant conservation program on the planet. The womb-like, undulating interior cavity delineated by the staggered filaments served as a physical archive of botanical wisdom in which visitors could be completely immersed. The *Lithuanian Pavilion*, designed by Mecislovas and Martynas Valevicius for the Yeosu World Expo in 2012, presented another approach to structuring natural knowledge – in this case exhibiting vitrines housing rare Baltic amber specimens within a space composed of entirely backlit translucent surfaces that resembled the fossilized resin substance.[12]

Processes

Processes refer to natural methods of fabrication and construction. Since the Industrial Revolution, material fabrication has generally been carried out in a highly resource-intensive, inefficient, and polluting manner. By contrast, natural processes use resources effectively and generate byproducts that may be reutilized. In this way, even natural waste is a resource for another process, unlike many types of industrial waste that must be disposed in landfills. Another distinction pertains to the issue of control in design and manufacturing. Industrial logics and traditional design approaches mandate near total control over design and manufacturing, leaving nothing to chance. However, the incorporation of natural processes in design introduces a new kind of material agency in which biological, chemical, or physical processes are allowed to run their course and subsequently alter the final results. What is effectively a partnership with nature – rather than traditional brute consumption of natural resources – presents an intriguing opportunity for designers, who assume the role of directors of the design experiments they set into motion.

Processes may be generally conceived according to the two approaches of additive and subtractive methods. Today, additive manufacturing is commonly associated with 3D printing, a technique that is largely perceived as entirely manmade. Yet many natural examples of this approach may be seen in the animal kingdom. For example, potter wasps construct nests by regurgitating masticated soil and other materials in additive layers, producing hollow vessels resembling clay pots. Based on this biological model, the Italian company WASProject has developed a method of 3D printing earthen structures of aluminosilicate clay.[13] A kinematics printer governs a material-extruding nozzle that incorporates reinforcing materials, like hemp and kenaf fibers, adding enhanced tensile properties to printed constructions. At this time, WASProject can print structures up to six meters in height. Another biological model is the sessile barnacle, which effectively "prints" its chitinous shell over time, extending its height and diameter as the animal grows from within. University of Minnesota architecture students devised a method of printing cementitious materials with a custom-built, nozzle-fed table, which produces conical cells of manifold heights and diameters based on available space.[14] A third example of zoological construction may be seen in the *Silk Pavilion*, designed by MIT Media Lab researchers, who placed 6,500 live silkworms on a dome-shaped scaffold composed of lightweight steel formwork and silk cables.[15] Over time, the insects spun a fibrous curtain of silk over the formwork, which was later removed to showcase the entirely animal-constructed textile skin.

Designers have also employed mineral-based processes in their work. The *Seizure* project by UK artist Roger Hiorns, for example, demonstrates the potential of crystalline-clad surfaces to create new kinds of user experience (Figure 30.2).[16] To create the work, Hiorns created watertight seals around an apartment in London, and then immersed it in a water-based solution with copper sulfate. After one month, the artist removed the fluid to reveal a space entirely encrusted with blue crystals. In another example, University of Minnesota architecture students created self-similar building modules made from borax crystals. The crystal bricks were made by placing felt-wrapped PVC pipe sections in a mineral solution. After

six hours, the tubes were removed to reveal sturdy yet lightweight cylindrical blocks of white crystal. The students constructed a full-height pavilion with these modules, demonstrating their capacity to hold 100 times their own weight.

These students also explored the potential of natural subtractive manufacturing processes. In one project, they studied the ways in which termites digest wood fibers. Based on the knowledge that particular species of termites are attracted to the softer, wetter regions of timber specimens, the students proposed a series of plywood sheets custom designed to anticipate particular patterns of termite digestion along their surfaces. In this way, the insects could be employed to create acoustical interior wall or ceiling panels of varying absorption levels – each one uniquely crafted by termites. The *Truffle* house in Costa da Morte, Spain, exemplifies an animal-driven subtractive process at a much larger scale.[17] Designed by Ensamble Studio architects, the house was constructed of concrete cast around a formwork composed of stacked hay bales. Once the concrete cured, a small calf was led to the entrance of the structure and encouraged to eat the compressed hay. Over the course of one year, the calf ingested all of the formwork, revealing the interior of the house. During this time, the animal grew to be a mature cow of over 600 pounds in weight, symbolizing the conversion of a residual building material by a metabolic process.

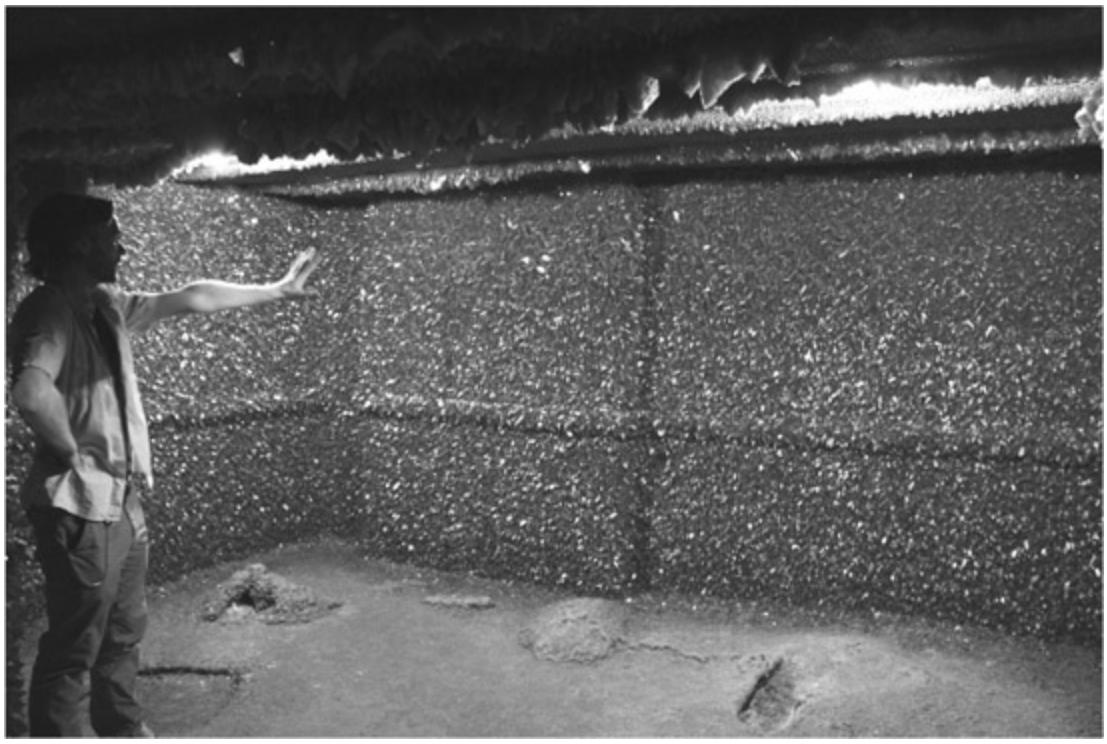

Figure 30.2 *Seizure* by Roger Hiorns

Image credit: Hilary Perkins

Phenomena

Phenomena concern the transformational qualities of environments over time, as experienced in changes of weather or fluctuating seasonal patterns – or in natural organisms' responses to their physical contexts. Like the processes described above, natural phenomena invite new ideas about the notion of control. In some ways, interactive and responsive architecture enables greater user control than in conventional interiors. In other ways, however, continually transforming environments signify an unpredictable departure from traditional, homogeneous spaces.

One of the most direct applications of natural phenomena is the physical re-creation or simulation of meteorological experiences within interior environments. Many studies have demonstrated, for example, the beneficial health effects that result when high-quality daylighting and ventilation are introduced to interior spaces. Recent experiments in this area

have resulted in some significant and unexpected designs. One application is *CoeLux* sky simulation, a lighting strategy that recreates daylight within interior environments.[18] Not only is the recessed fixture designed to provide accurate daylight color temperatures, but also the colors gradually change to represent natural diurnal and seasonal cycles. A notable accomplishment is the simulation of sky dome illumination, which resembles the visual phenomena of light bouncing within the atmosphere. While this technology suggests obvious benefits for interior occupants – particularly those inhabiting dark or windowless spaces – other approaches bring less conventional natural experiences indoors. One example is *Cloudscapes*, developed by Tetsuo Kondo architects and Transsolar engineers, which generates cloud formations within buildings.[19] As spray nozzles emit a fine mist of moist air, users experience different atmospheric strata at varying heights. A similar, yet vertically oriented application is the *FogScreen*, which creates a curtain of fine mist for the purpose of projecting light and images in mid-air.[20] A final example is the *Rain Room* by rAndom International, which allows users to experience a heavy rainstorm indoors without getting wet, thanks to a grid of sensors that turn off valves directly above occupant positions (Figure 30.3).[21]

Another application of phenomena relates to the way natural organisms respond to environmental changes. For example, phototropism describes the way in which plants respond to the presence and direction of sunlight. Oxalis and velvet leaves open during the day and close at night, exhibiting what are called circadian responses to diurnal changes. The *Bloom* pavilion designed by DOSU Studio simulates this botanical phenomenon in a non-biological material.[22] The 20-foot-tall, open-air structure is composed of thousands of strips of thermobimetal (a lamination of thin alloys with different thermal expansion rates). When sunlight intensifies along the outside surface, bimetal strips peel upwards to introduce ventilation and shade to the sheltered space within. Decker Yeadon's *Homeostatic Facade* system similarly regulates shade in an automatic fashion for interior users.[23] In this project, shading fins made of electroactive polymers wrapped in silver electrodes open and close based on the amount of direct sunlight.

Inspired by the way that muscle tissue flexes and relaxes, the designers created a system that exhibits a large mechanical deformation with a low energy input. The *HygroSkin* pavilion in Orleans, France, also regulates its interior environment based on external changes.[24] The deciding factor in this case is humidity. When the relative humidity level in the surrounding air increases above 60 percent, wood "petals" made of thin veneer curl back to reveal openings in the walls, thus encouraging air flow. The project was inspired by spruce tree cones, whose seed pods open when the humidity of the atmosphere reaches an elevated level. Another phenomena-focused design application is *Stratus* by RVTR.[25] This parametrically generated installation combines multiple ceiling functions such as illumination, ventilation, acoustic dampening, and sensing in one integrated structure. *Stratus* senses the presence of occupants, their temperature, and CO_2 levels in the surrounding air, providing contextual lighting and micro fan-assisted airflow as needed. The project illustrates the capability to deliver traditionally separate services in a more targeted way within a singular, atmospheric surface.

Figure 30.3 *Rain Room* by Random International

Image credit: Random International

Future implications

The experimental Japanese designer Tokujin Yoshioka creates environments that exemplify the search for a deeper connection with natural systems and experiences. When once asked what implications his methods have for the future of design, he replied:

> The fact that creation is not entirely controlled by human beings; beauty is born out of serendipity… . This production method highlights the boundary between the physical world and the world of the imagination. In this sense, the process broadens the boundaries of creativity.[26]

Yoshioka's response illustrates both the difficulties and possibilities afforded by hypernatural design. On one hand, designers engaging in this kind of work must relinquish some control by prioritizing natural processes and principles – whether it be empowering silkworms to weave textile surfaces or growing building blocks from crystals. Giving away control is counterintuitive to a design community trained to manage all details of a project. On the other hand, the advantages provided by these kinds of explorations enable new design opportunities that would not be possible with conventional approaches, such as surfaces that naturally shade and ventilate interior spaces without the need for mechanical equipment, air purification, and oxygenation systems composed of pollution-neutralizing plants, or construction tasks that are executed superbly by non-human species. As long as designers establish the right conditions for a project at the outset, the benefits of hypernatural design outweigh the downside of micromanaging all aspects of the work. To be certain, interior architecture's recent incorporation of natural processes and principles remains in an early stage of experimentation; a comprehensive accounting of environmental,

social, and economic effects has yet to be conducted. Nevertheless, the idea that we might collaborate with nature – rather than merely exploit it – suggests a more thoughtful and meaningful form of design, and the ensuing work will deliver refreshingly unconventional results.

Notes

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17 "The Truffle, Costa da Morte, 2010", Ensamble Studio, 2010, www.ensamble.info/#!thetruffle/c1f4p.

18 CoeLux, established in 2009, www.coelux.com.

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21 "Rain Room, 2012", Random International, 2012, http://random-international.com/work/rainroom/.

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23 Suzanne LaBarre, "Mighty Building Facade Beats Solar Heat With Mechanical Muscles", Fast Company, 4 January 2011, www.fastcodesign.com/1662975/mighty-building-facade-beats-solar-heat-with-mechanical-muscles.

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Chapter 31

Internal disconnect

Material memory in the John Portman originals

Gregory Marinic

Iconic architectural interiors present a unique challenge and opportunity for designers who are charged with their renovation. Considering the temporal nature of building interiors in relation to forces of consumption and trend, this chapter considers the spatial theories of Henri Lefebvre, Jean Baudrillard, and Fredric Jameson to discern broader socioeconomic forces impacting materiality in John Portman's late Brutalist architectural interiors. As a forerunner of twenty-first-century interior hyperspaces in Las Vegas, Dubai, Abu Dhabi, and elsewhere, Portman's early works – specifically the Hyatt Regency Atlanta, Westin Peachtree Plaza, and Detroit Renaissance Center – serve as precedents for contemporary entertainment-based environments worldwide. In 1967, Portman unveiled the Hyatt Regency Atlanta and redefined generational expectations for downtown development in American cities. Although his atrium hotels eventually gained stature as enduring design icons, recent interior renovations have largely ignored the

original materiality and civic gravitas of the unique "Portman effect." Drawing awareness to issues surrounding the renovation of historically prominent modern architectural interiors, this chapter critiques contextually insensitive renovations in the shopping galleries, lobbies, and social spaces of the John Portman originals.

An interior-exterior provenance

In the nineteenth century, the tectonic qualities and material conditions of commercial arcades blurred city streets into building interiors. Parisian *passages* and other interior urban environments such as the Galleria Vittorio Emanuele II (1865) in Milan, Galerias Pacifico (1889) in Buenos Aires, and the Old Arcade (1890) in Cleveland served as forerunners of the atrium hotel-shopping complexes of the mid-twentieth century. The architectural language of these European and European-inspired interior spaces was appropriated by John Portman for his unique interior-exterior aesthetic in America. Analogous to Lefebvre's consumption-oriented theory, arcades and Portman atria extended commercial space into large urban plots to establish new interior streets for storefronts and cafés. Although the historic European passages and American arcades maintain strong interior-exterior readings, Portman's buildings have undergone continual interior renovations which have subverted the original *exterior* aspects of their interior architectural design.

As both architect and developer, Portman's hotel-retail-commercial complexes transformed downtowns into increasingly isolated, transactional, and privatized forms of urbanism. These internally focused projects embraced a Brutalist aesthetic by appropriating exterior spatial conditions and materials to create interior urban experiences.[1] Portman addressed the conventional wisdoms of various stakeholders – planners, developers, architects, retailers, and the public – who sought a substitute form of downtown urbanism that ignored the realities of civil unrest, disinvestment, and abandonment. As American inner cities shrunk from white flight, his city-within-a-city concept responded to increasing

uncertainty. Building exteriors were turned outside-in to create autonomous internal plazas, encapsulated landscapes, and hermetic commercial zones.

Beginning in 1967 with the Hyatt Regency Atlanta, Portman created bold interior spaces that brought the outdoors inside by challenging conventional assumptions of the hotel interior.[2] Soaring spaces, building-scale internal facades, extensive landscaping, lagoons, and exposed concrete embodied an interior-exterior aura. As temples of consumerism subjected to market pressures and changing tastes, his late modernist hotel-retail interiors were among the first to be adapted in the postmodern wave. The qualitative permanence of these iconic structures – their monumental, austere, and sublime interior architecture – has been incrementally diminished and *interiorized* by the insensitive actions of corporations, real estate developers, managing agents, and professional designers. Focusing on recent adaptive practices, this chapter critiques twenty-first-century renovations to the original John Portman interiors of the Hyatt Regency Atlanta (1967), Westin Peachtree Plaza (1976), and Detroit Renaissance Center (1977).

[Irreverent] dematerialization | Hyatt Regency Atlanta

> Hyatt Regency Atlanta is completing the final phase of the $65 million transformation that has seen new enhancements made property-wide. The renovation positions the landmark downtown hotel as a leader in Atlanta, with design changes meeting the needs of today's business travelers and conference attendees.
>
> — Hyatt Corporation, March 2012

The Hyatt Regency Atlanta forms part of the fourteen-block Peachtree Center master plan, which restructured the central core of Atlanta into an interiorized downtown environment.[3] More than a hotel, Portman created a substantial piece of urbanism which contrasted significantly with the racial

fragmentation of the American South in the 1960s. Isolated from the historic downtown, the Hyatt Regency was conceived as a district or neighborhood inside the Peachtree Center city-within-a-city.[4] Portman used cast-in-place concrete, glazed terracotta tiles, extensive landscaping, water features, and large public sculptures as urban design elements distributed throughout the exterior and interior spaces of the complex. This networked world of skywalks, tunnels, arcades, and atria was designed to be weatherproof, convenient, and safer than downtown itself.

It is within the original materiality of the Hyatt Regency Atlanta, however, where Portman's ambivalence is most clearly manifested. The original interiors operated more like exteriors, yet external in ways that did not appeal to the aesthetic sensibilities of the general public. Brutalist forms and spatial qualities alluded to utilitarian drainage easements, expressways, and social housing – places that were perceived negatively or akin to public works. For the adventurous and architecturally sophisticated, Portman interiors were sublime and avant-garde, but for many, these grandly scaled spaces appeared stark and alienating rather than welcoming and conventionally luxurious.

By the early 2000s, changing tastes and stylistic trends spawned continual adaptations to the public areas of the Hyatt Regency Atlanta. For example, Portman originally designed a tunneled entrance experience as a narrow space that opened into a massive atrium. Although the space resembled the underside of an expressway flyover, it created an uncommon spatial aura. Intentionally low-lit, the original space encouraged guests to move quickly through its compressive confines. The main entrance – routinely criticized for its understated qualities and lack of a porte-cochère canopy – was renovated to more closely resemble conventional four-star hotels. Today, the uniqueness of Portman's original entrance has been replaced with an expansive glass portal that undermines the intent of the arrival sequence. In the past, a dark and sublime space offered a powerful transition to the atrium. Its concrete surface – an unfinished material that conveyed interior ambivalence – was removed and replaced with smooth

marble; bright lighting and new porcelain flooring further diminished the original atmosphere to achieve an expectable aesthetic.

Apart from the renovated tunnel, public areas throughout the hotel have been altered to address popular expectations for uniformly bright and neutral spaces. As evidenced in this post-renovation statement from Hyatt, aura has been abandoned in favor of familiarity:

> The transformation of the Hyatt Regency Atlanta includes a significant refresh of the hotel's soaring 22-story atrium lobby. The entrance area has a clean, open feeling upon arrival with pod-style desks providing an intimate and personalized check-in experience. Custom art created from brass key fob replicas from the original Regency Hyatt House embellish the reception area.[5]

One of the most significant and destructive alterations to the Hyatt Regency Atlanta was initiated in 2010 by TVS Design.[6] TVS led an extensive renovation that removed the white-glazed terracotta flooring in the atrium and common areas.[7] The original fan-pattern tiles evoked an abstracted European cobblestone street that made the atrium feel both public and urban. Why was this critical interior condition replaced with conventional porcelain tile? Were the designers unaware of the historical importance of this material and its spatial intent? Among the most irreverent departures from the Portman concept, the new floor disrespects the historical integrity of the original interior surface. Furthermore, the scalar and material qualities of the new floor are incompatible with the monumental scale of the 22-story atrium. Reorienting an interior-urban space into an ordinary *interior* space, the civic stature of the Portman original has been significantly diminished.

While the original interiors of the Hyatt Regency Atlanta engaged layers of textural and spatial complexity, it was the lighting concept that imbued subtle, nuanced, and otherworldly qualities. In the 2010 renovation, the original internal exteriority was altered with a new lighting concept that changed the type and amount of artificial light, as well as its relationship to

materiality. The entrance and atrium spaces were brightened substantially, while the material palette was lightened.[8] The resulting environment no longer enhances spatial depth and unseen spaces; these distinctions have been neutralized and rendered equally. At night, the brightness of the ground plane detracts from the ability to perceive the dramatic verticality of the atrium. In short, this impressive interior urban space no longer appears as monumental as it once did.

In the original design, materials were coordinated to enhance their impact at the scale of the building and the city. In the 2010 renovation, TVS Design selected materials for their individual qualities instead of their relevance to the 1967 concept. Pursuing a safely conventional aesthetic rather than a rigorous and integrative approach to architectural interiors, TVS imposed new materials that disregard the notable provenance of this iconic building. Designers ignored the urban tenets of the Portman original. The monumental atrium space remains; however, its material articulation and overall effect have suffered immeasurably.

Apart from materiality and light, various significant architectural elements have been removed. From 1967 through the early 1980s, the atrium ceiling served as a constructed sky plane surrounded by balconies that resembled landscaped terraces. Since 2010, hanging vegetation has been entirely removed and guest room corridors have been refitted with conventional patterned carpeting. The overall interior architectural effect has shifted from "exterior terraces opening onto the city" to "interior hallways surrounding a lightwell." Furthermore, a pair of monumental hanging follies that gave scale to the atrium – a three-story birdcage with parrots and a grandly scaled, ornamental parasol – have been dismantled.[9] Their removal has altered the public sensibility of the atrium in favor of a more ordinary hotel lobby aesthetic. Although the structural bones of the Hyatt Regency Atlanta remain, the uniqueness of its interior urbanity has been largely erased.

[Superficial] adaptation | Westin Peachtree Plaza

In 1976, the Westin Peachtree Plaza Hotel opened in downtown Atlanta on a site formerly occupied by historic theaters.[10] Like the Hyatt Regency Atlanta, the Westin Peachtree Plaza shares Portman's urban principles that appropriate aspects of traditional street life for the interior. A seventy-story concrete structure sheathed entirely in reflective glass is anchored by a concrete podium base; glass elevators lead to guest rooms, a revolving restaurant, and a cocktail lounge at the summit. Its five-story atrium surrounds a circular elevator core with shops, cafés, and restaurants terraced along the eastern and western wings of the podium. The Westin Peachtree Plaza, Los Angeles Bonaventure, and Detroit Renaissance Center share similar formal qualities, yet dissimilar spatial strategies. Of these, the Westin Peachtree Plaza embodies the clearest and most compact spatial organization. The original design of its atrium podium employed a design strategy similar to the Los Angeles Bonaventure (1976) and Detroit Renaissance Center (1977). Rough concrete formed the backdrop for a dream-like indoor space with a lobby lagoon and cocktail lounge "lily pads" set within the lagoon or cantilevered above the central space. In the original design, vegetation and hanging "rain beads" softened this hard-edged space, yet the interior was criticized by the public for being both unfriendly and austere.

In 1986, the lobby lagoon was unceremoniously drained and the base-level cocktail lounge lily pads were removed to make way for postmodern follies designed by John Portman himself.[11] Described by his publicists as "modern interpretations of a classic Venetian piazza," these polychromatic pavilions were reinterpretations of the Tivoli Gardens in Copenhagen.[12] Portman's stage set installations transformed the lobby into a more difficult space to navigate and occupy. Although meant to infuse playfulness and delight, the follies seemed strangely out of place within the Brutalist concrete podium; they quickly collected dust and grew outmoded and worn. Furthermore, the notion that John Portman initiated the design and installation of such work is quite remarkable, but reveals his hybrid architect/developer perspective on interior design. With the postmodern follies, Portman introduced an alternative spatial logic that recast the

podium base as a context for temporal interiorities which addressed conventional preferences and consumerism. The architectural language of the 1986 installations embodies the ambiguities of postmodernism relative to interior architecture at a hyperscale. In addition to the postmodern follies, new restaurants, bars, and shops were introduced into the overscaled circulation spaces to facilitate greater financial return. These renovations diminished many of the extraordinary interior-exterior conditions and spatial qualities in the Westin Peachtree Plaza.

In the early 2000s, the postmodern follies were removed, but the original lobby lagoon, base-level cocktail pods, and vegetation were not restored. Further subverting the exterior qualities of the space, circulation areas were carpeted and the exposed concrete structure was painted light gray. In doing so, the hard-edged Brutalism and urban characteristics of the space were further subdued. Like actual urban space, the early Portman hotel-shopping galleries offered voluminous, unarticulated, and unusable spaces. A maze of *terrains vagues*, these spatial gratuities have been reduced to minimums in the reprogramming of the Westin Peachtree Plaza. Today, there is very little *terrain vague* left to critique in the Portman hotels; the interior complexities and expansiveness of the podium have been value-engineered into leasable space.

[Radical] intervention | Detroit Renaissance Center

In 1970, Henry Ford II and the Ford Motor Company formed a coalition with other business leaders to initiate *Detroit Renaissance*, a non-profit organization focused on generating economic revitalization in the city.[13] The group announced the development of Renaissance Center and its construction commenced in 1971. The hotel tower of the Renaissance Center opened in 1977 as the Westin Detroit Plaza Hotel and became the tallest all-hotel skyscraper in the world.[14] Although the hotel and office towers were encased entirely in reflective glass, the complex was perceived as an

impermeable bunker, blocked by concrete berms that visually and psychologically separated it from downtown. Portman's original design for the Renaissance Center created hermetically enclosed and secure interior spaces. Harshly criticized, these spaces were later reconfigured to connect with exterior spaces and the waterfront.

John Portman's urban redevelopment projects, including the Atlanta Peachtree Center, San Francisco Embarcadero Center, Los Angeles Bonaventure, and Detroit Renaissance Center, have been deemed too big to fail. While they have never been abandoned, each has required intensive modifications to remain economically viable. The Brutalist spirit of the Renaissance Center has been unable to withstand the forces of time, trend, financial performance, and consumer preference. Viewed from the standpoint of historic preservation, various interventions have attempted to reform its monolithic qualities, yet these renovations have resulted in a radically transformed structure. Changing market forces have played a significant role in the elimination of generous circulation areas and civic interior scale; some of these changes have been positive for Renaissance Center. Today, its shopping galleries receive more natural light, spaces are easier to navigate, retail areas open onto the riverfront, and the complex activates outdoor street life. Even so, many of these adaptations have created interior spaces that lack the avant-garde qualities of the original John Portman interior design.

Since opening in 1977, the Renaissance Center shopping galleries have suffered from poor retail sales, high turnover, and extended vacancies. Although the complex is sited on the Detroit River overlooking Windsor, Canada, the original design turned its back on both downtown Detroit and the international waterfront. In 2001, after more than two decades of criticism and falling retail revenues, the General Motors Wintergarden atrium was unveiled.[15] Designed by SOM, the atrium added significant square footage and a direct connection to the international riverfront. Although the Wintergarden has been applauded for activating street life, the retail galleries of the Renaissance Center continue to suffer from high vacancies.[16]

Whether configured along streets or shopping galleries, retail is most successful when designed in frontally opposing sides; double-loaded retail offers higher return than single-loaded retail.[17] In the original design, John Portman used monolithic concrete ramps, stairways, and guardrails as formal elements, while most retail spaces were single-loaded with views of the lobby lagoon, cocktail pods, and central core. Retail was dispersed evenly around the periphery of the podium base and lacked critical density. Likewise, the visually impermeable concrete ramps, stairs, and core obstructed sight lines across the complex. Although spatially complex and visually bold, these circulation armatures created dark interior spaces that were at once difficult to navigate and challenging for retailers. Once inside the Renaissance Center, visitors were spatially disoriented and unable to find the shops. Portman's desire to privilege social spaces instead of revenue generators made RenCen's podium base difficult to lease. Retail spaces were not designed for optimum financial gain, but tuned to his utopian architectural concept. Lobbies were envisioned as piazzas and corridors were conceived as streets; their generous scale gave the complex a sense of spaciousness, well-being, and grand interior urbanism. Addressing spatial confusion in the interior spaces, SOM introduced a glass-ring mezzanine walkway in the 2004 renovation.[18] This handsome feature dematerialized one of the most obtrusive aspects of the Renaissance Center base podium design. Replacing a maze-like pattern of movement, the glass-ring mezzanine walkway has improved lighting and sight lines. Its design is sympathetic to the original design and provides an impressive, stylistically appropriate architectural element set within the concrete podium context.

One of the most significant departures from the original Portman design of the Renaissance Center has been the rebranding of the complex by the General Motors Corporation. In 1996, GM acquired the Renaissance Center and began an extensive program of exterior and interior renovations.[19] GM renamed the complex, drained the lagoon, removed public amenities, and introduced a promotional automotive exhibition. Reconceived as the *GM Renaissance Center*, the company began reprogramming the grandly scaled circulation spaces into a promotional

showroom for GM vehicles. One of the first interventions was the removal of the concrete berms that separated the Renaissance Center from the rest of downtown Detroit, followed later with the Wintergarden, the glass-ring mezzanine, and several repurposed lobby-exhibition spaces. In a dramatic turn from landscaped water garden oasis to GM-branded exhibition, the podium base lobby was drained and vegetation removed. It its place – yet ironically appropriate for Detroit – a showroom of American-made GM cars and trucks stands permanently on guard. The year-round conservatory of trees, water, and filtered light envisioned by Portman in the early 1970s has given way to a glorified parking lot.

The efforts to make RenCen's voluminous spaces economically viable has resulted in highly compromised interior architectural qualities. Although the most recent renovations have carved out economic viability in place of spatial gratuitousness, they have largely erased the last traces of civic gravitas in the Renaissance Center. While RenCen has been deemed too big to fail, its investors have responded by adapting interiors that have suffered immeasurably in their continual transformation. While embracing the larger city and increasing revenue, the interior glories of the Renaissance Center have been largely lost to memory. Today, the Renaissance Center remains activated and vital, but embodies a far less civic environment in its corporate reincarnation. The public reading of circulation spaces has been diminished by the extensive branding program – interior circulation spaces feel like a three-dimensional GM advertisement – rather than the interior urban spaces that they were designed to be.

The Portman originals through the lens of Lefebvre, Baudrillard, and Jameson

Since opening in late 1960s and through the mid-1970s, the John Portman originals have been roundly criticized for their arrogance to cities, formal objectification, and fortress-like singularity. As generators of interior urbanism and forums for the guilty pleasures of consumerism, these

complexes attempted to renew American cities by means of interior urbanity. Blending real estate development and architectural production with consumption, Portman successfully married his social ambitions to several mega-scale projects that were ultimately deemed too big to fail. His legacy stood apart from reigning paradigms to ultimately assert a longer-term influence, merging consumption and commercialization with urban revitalization. It is, however, within an embrace of consumerism and trend that Portman's projects are beginning to lose their fantastical internal qualities. As evidenced in these case studies, the Portman originals have been continually undermined by shifting stylistic and consumer preferences, as well as the destructive practices of insensitive interior renovations.

Although the Portman originals can only remain economically viable and resilient through their continual redesign, they were originally conceived as alternative images of the city and hermetic interior worlds. These projects embodied a utopian social experiment paired with the hedonistic pleasures of consumption and desire. Although the Westin Peachtree Plaza exudes a sophisticated spatial postmodernity, its emergence at the end of late modernism paralleled emerging postmodern forces in popular culture reinforced by capitalistic impulses in politics, art, architecture, and design. As evidenced in the 1986 renovation of the Westin Peachtree Plaza, the postmodern renovations contradicted the most salient aspects of the original design aesthetic. Here, Portman himself used a symbolic understanding of postmodernism as a stage set intervention. In this sense, the follies embraced postmodernity as fashion in the form of consumer kitsch. After only a few years, however, the banal and vulgar follies proved to be a temporary intervention which met their own demise.

Acknowledging the dynamic nature of building occupancies, theorists Henri Lefebvre, Jean Baudrillard, and Fredric Jameson assert that technologically advanced societies no longer produce spaces that are entirely organic. Spaces are increasingly commodified to serve consumption; they as act as collectors of things. In *The Production of Space*, Henri Lefebvre defines space as a commodity directly linked to production and capital.[20] He further identifies three spatial subcategories that include "*abstract space*,"

responding to political and economic forces; "*absolute space*," created by everyday, participatory actions; and "*differential space*," mobilized by resistant forces existing within absolute space.[21] Lefebvre situates his theoretical argument primarily within cities and the public realm; however, his postulations are particularly well suited to the urban-scale renovated interiors of Portman hotels. Lefebvre's notion of differential space relates to the dynamic relationships among shifting physical conditions, material assemblies, spatial occupancies, and interior-exterior conditions in Portman's work.

French theorist Jean Baudrillard identified the World Trade Center, Centre Pompidou, and John Portman's Los Angeles Bonaventure – cousins of the Westin Peachtree Plaza and Detroit Renaissance Center – as crucial buildings revealing the cultural logic of modernity and postmodernity.[22] Baudrillard's observations were rooted in the post-structuralist conviction that meaning is brought about through *systems* of signs working in unison. These systems are underscored by his analysis and critique of radical shifts operating simultaneously within both global architecture and popular culture. Baudrillard assessed the hyperspaces of the Bonaventure as an unintentional parody of modernism related to an arbitrary and misleading spatial language.[23] Both Jameson and Baudrillard conclude that it is the subversive nature of modern *parody* that positions the Bonaventure within the postmodern.[24] For Baudrillard, the modernist parody represents a dialectic relationship between what is considered acceptable with regard to universal norms, while being influenced by subjective aesthetic preferences. Acknowledging his perspective on the death of the subject through enslavement to mass media, as well as Michel Foucault's critique of subjectivity, the spatial freedom of the John Portman original interiors reveals the end of style and a return to something more coded and intuitive.[25]

In the Los Angeles Bonaventure, Baudrillard lauds Portman's ability to create an ideal inner world which replicates the city within a building.[26] Similarly, the Detroit Renaissance Center isolates itself to create an even more powerful and autonomous interior world – a micro-world.

This isolation is heightened by the obscurity and insignificance of its entrances, as if to say that the space within aspired to inaccessibility from the city beyond. The impermeability of the Detroit Renaissance Center at ground level is revealed in its lack of a central and hierarchically significant primary entrance. Its five towers emerge from a hulking concrete podium, yet the original pedestrian connections to the interior world were underscaled and discrete. Here, modernity marks a violent insertion into the city by coding its superiority as indifference. The subtle way, however, that it connects interiority with downtown Detroit and beyond reveals the influence of postmodernity. The reflective glass skin turns its exterior surface into a mirror of the urban context. Further dislocating the complex within the city as if to dematerialize it, the interior space has no exterior, no "definitive" exterior. In turn, this lack of a definable exteriority underscores the subliminal reading and primacy of the interior. Although the renovations sought to adapt this relationship, the monumental internal civic spaces of RenCen are meant to be experienced from within, rather than engaged as an integral part of the city. Thus, the podium base of the Detroit Renaissance Center spatializes Baudrillard's theory of consumption, ambiguity, and postmodernity envisioned in his seminal book, *The Consumer Society: Myths and Structures*, originally published in 1970.[27]

Jameson suggests that John Portman's projects offer spaces which reflect postmodern societal norms. As a Marxist cultural theorist, Jameson has been instrumental in advancing postmodern architectural theory.[28] He claims that a "new world of multinational capital" assumes an "impossible" representation in the interior hyperspaces of the John Portman megastructures.[29] However, moving beyond its impact as a hermetic hyperspace, the renovated complex acts as a metaphor for our increasingly fragmented society, the contentiousness of the building-oriented design disciplines, and even more for the American city. In his 1984 criticism of John Portman's work, *Postmodernism, or, The Cultural Logic of Late Capitalism*, Jameson asserts that in uncritical, media-enslaved societies the possibility for pastiche thrives.[30] This postmodern spatial pastiche reflects a media-dominated culture whose citizenry lack subjectivity and the desire for

high art. Claiming that capitalism and consumer commodification have destroyed the ability for contemporary culture to innovate, Jameson further rationalizes that postmodern pastiche is linked to an inability to develop new "styles" as they are perceived to have already been invented.[31] Thus, art and the past are endlessly recycled and modernism becomes merely a postmodernist code. In this sense, Portman codes his reflective glass building envelopes for the Westin Peachtree Plaza and Detroit Renaissance Center as "modern," while simultaneously experimenting with interior spatial postmodernity. This skin serves as a tenuous boundary between an ordered external architecture and the ongoing aesthetic chaos of its renovated interior spaces.

Jameson further explains the public desire for nostalgia and an obsessive reinterpretation of the past through postmodern art and architecture. The commodification of culture and the increasing vacuum of a recycled past has also resulted in what he terms a schizophrenic disposition within postmodern space.[32] For Jameson, postmodern schizophrenia derives from a lack of historicity, or the disappearance of a sense of history due to postmodern recycling of the past. He posits that Portman engaged in postmodern spatiality well before the overtly literal postmodern follies at the Westin Peachtree Plaza in the early 1980s. He asserts that the spatiality of Portman's work embodied the postmodern excesses of a consumptive society blindly producing pastiche as a placeholder for high culture. This sensibility may be further applied to the temporality of later renovations and the incremental breakdown of the original interior architectural design.

Today, Portman hotel interiors are characterized less by the permanence of their original interior architecture and more by temporality and trend-influenced interior design. The unthoughtful renovations of the Portman originals in the early 2000s have not been well documented – or lamented – or considered in relation to marketplace pressures alongside the cyclical nature of "entertainment" architecture. The theoretical critique of Portman's earliest buildings by Jameson and Baudrillard has long since passed, yet the adaptation of these structures has *not* been adequately critiqued regarding stewardship of their historically significant architectural

interiors. While it may be somewhat harsh to claim that theses spaces have been entirely destroyed, as iconic works of spatial postmodernism, they are certainly fading away with little notice or concern. For the most part, the spatial complexities and *terrain vague* ambiguities that so entranced Jameson and Baudrillard no longer exist in the iconic John Portman originals.

The spatial theories of Lefebvre and early critiques of Portman's work by Baudrillard and Jameson assert that buildings are often critiqued most rigorously in their original form – whether celebrated or derided – and changes to their interior spaces are often forgotten. Building interiors, such as the Portman originals, allow social processes to be manifested, observed, and reconfigured. Accordingly, the interior renovations and manipulations of significant works of interior architecture should form part of the most vocal discourse of design theory and criticism in the field. The critique of the renovated Portman originals has, for the most part, ground to a halt. Or have the critics simply not noticed that these iconic interior spaces have been nearly erased?

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Chapter 32

Inside-out and outside-in

The envelope and the search for a heterogeneous interiority

Marco Vanucci

Among all the elements of architecture, the building envelope plays a key role in defining the relationship between the surrounding environment and the articulation of interior spatiality. In particular, through new understandings of material systems and performance, the articulation of the envelope in contemporary architecture aims at the production of heterogeneous spatial constructs. Beyond the dichotomy of form and program, interior architecture can be rediscovered through the articulation of performative envelopes. The progressive architectural discourse of the past fifty years has been polarized by research of complex forms, on the one hand, and by the innovative articulation of program on the other. This emphasis on the autonomy of form has been counteracted by the determination of programmatic relationships. While these two aspects have been thoroughly investigated and have produced vast amounts of literature, questions related to the articulation of interior space have not received a

corresponding level of critique. Discourse surrounding spatial design has paradoxically centered on the description of aspects that influence the shape or fruition of spatiality, without engaging into a deeper understanding of the quality of interiority.

The postmodern study of architectural typologies (Aldo Rossi's work, for example) with its tendency to privilege form has moved on to extensive research of programmatic hybridization in late postmodernism as evidence by the Office for Metropolitan Architecture. At the turn of the twenty-first century, the advent of new computational technology and digital fabrication marked a new phase. The exploration of complex, informal geometries opened up new ways of thinking about the relationship between form and function. Seminal projects like the Yokohama Ferry Terminal by Foreign Office Architects paved the way to a new understanding of the relationship between materiality, structure, and performance in architecture. The problem of fabricating complex geometries (often related to projects whose main concern were the representation of the form of the object itself) gave way to a deep reconsideration of the material and performative quality of space in new architectures of the digital age.

Advanced computation became a tool for simulating material behavior, and the performative quality of space ceased to be merely a representational tool. The representation of architecture and its interior, in fact, has traditionally been expressed through orthographic projections in a Euclidean space. Plan and section are traditionally considered to be vehicles to communicate the organization and political dimensions of the architecture and its interior. The plan organizes a particular sequence of spaces and describes the nature of its human dimension. It manifests the intention of a specific social and political structure; a symmetrical and centralized plan aligns with a hierarchical organization, whereas a fragmented and distributed plan instigates a more open and democratic occupation of space. The introduction of the corridor, for example, marks an important moment in the organization of circulation within the dwelling unit. In "Figures, Doors, and Passages," Robin Evans[1] gives a compelling insight into the relationship between spatial organization and social

arrangements. He distinguishes between the medieval sequences of interconnected rooms with sixteenth-century British architecture, where the introduction of the corridor introduced the separation of different social strata within a single home. Privacy, distance, and the segregation of the aristocracy from servants were manifested in architectural forms for the first time thanks to the addition of corridors and ancillary circulatory spaces. Similarly, the section is a representational tool that can be used for organizing the hierarchy of social strata, whether through the separation of functions on different levels or through the homogenization of programs via the employment of pilotis and the open plan.

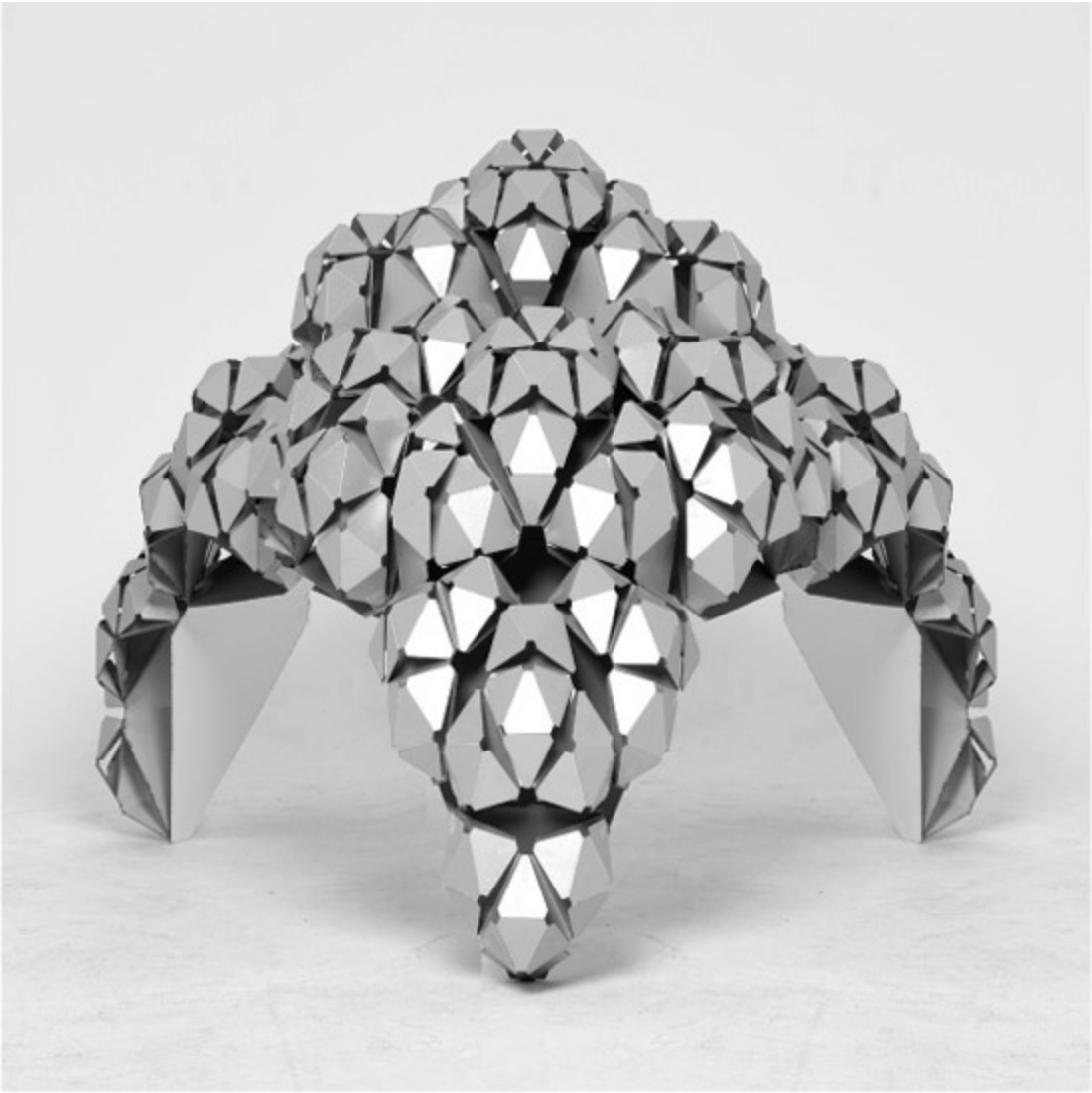


Figure 32.1 OPENSYSTEMS Architecture, Nexo is a project for a flexible kiosk in Chicago (IL). The envelope is formed by a triangulated three-dimensional fractal panel that forms a self-supporting structure. Its recursive geometry produces a fractal pattern: a series of identical, triangulated metal plates scale down in size as they grow over each other forming a visually compelling and solid structure.

The performative envelope

The building envelope is the diaphragm that articulates form and affects program. It provides a particular spatial condition on the interior while setting the scene for an event, which is fostered by the spatial construct. In its most primitive form, it protects the interior from the surrounding hostile exterior environment and provides a shelter. It also engages with its surroundings in many different forms: economically, socially, psychologically, and politically. It organizes the interior of the building and the external public realm with which it communicates; it controls the internal environment and marks the boundary of an architectural interiority. Considered to be the oldest and most fundamental architectural element, the envelope embodies the separation between inside and outside, the natural and the artificial. It demarcates the boundaries between two different spheres of control: the private and public properties. It has traditionally been relegated to expressing symbolic or representational functions. The building envelope, however, embodies a much larger ecology of meanings and synthesizes many heterogeneous inputs, including economic climate, environment, legislative norms, social organization, etc. In this sense, and most importantly, the envelope is the main agent for the articulation of its architectural interiority.[2]

The modernist paradigm was predicated on the assumption that "form follows function" and implied the correspondence between internal articulation and external manifestation of built form. The modern "machine for living" represents not only the functionalist response to the problem of architectural form, it also embodies its material strata. Innovations in material and construction technologies paved the way for the development

of the modernist manifesto. In a mature phase of modernism in the 1960s, flexibility became a desirable architectural quality. The increasing complexity of the built environment in a rapidly changing society demanded more sophisticated responses than the form-function relationship. The need for schools, hospitals, and housing projects for the new capitalist (affluent) society offered an opportunity to test the resilience of modern ideas in their ability to adapt to increasingly complex design briefs. The programming process was introduced by means of systematically collecting project-related data. Information was analyzed and interpreted in the form of graphic representation and computational iterations. Hashim Sarkis argues that while programming sought to elucidate a scientific approach to functionalism, it paradoxically helped to uncover a higher degree of indeterminacy. In short, it helped unleash new formal possibilities beyond its suitability to function.[3]

In the climate of socioeconomic globalization of the late twentieth century, new hybrid and mixed-use typologies emerged and became the testing ground for new programmatic organization. Rem Koolhaas sharply captured the spirit of this challenge and elaborated a new theory for postmodern architecture. In *S, M, L, XL*, the Dutch architect introduced the theory of "bigness": beyond a certain scale, "old" architectural principles (composition, scale, proportion, and detail) no longer apply. A new urban style emerges, one that no longer holds a relationship with the context but imposes itself on the context. Sanctioning the final disconnection between architectural interiority and exteriority, this discourse advocates for the advent of a new type of urban architecture that privileges the content over the context.[4] The building envelope becomes the field of negotiation between interior spatiality and exterior appearance. In 2001, Koolhaas pointed his critique to the soulless, "mallified" spaces spreading across the planet. He lamented the generic spaces that blended shopping malls, airports, hotels, convention centers, and art galleries into seamless uniformity. The junk space, he argued, is the true product of modernization. In this context, interior spaces became increasingly generic, while the building envelope gained a new centrality in contemporary architectural discourse. The

envelope becomes more and more sophisticated and actively responsive to external stimuli as well as internal needs.

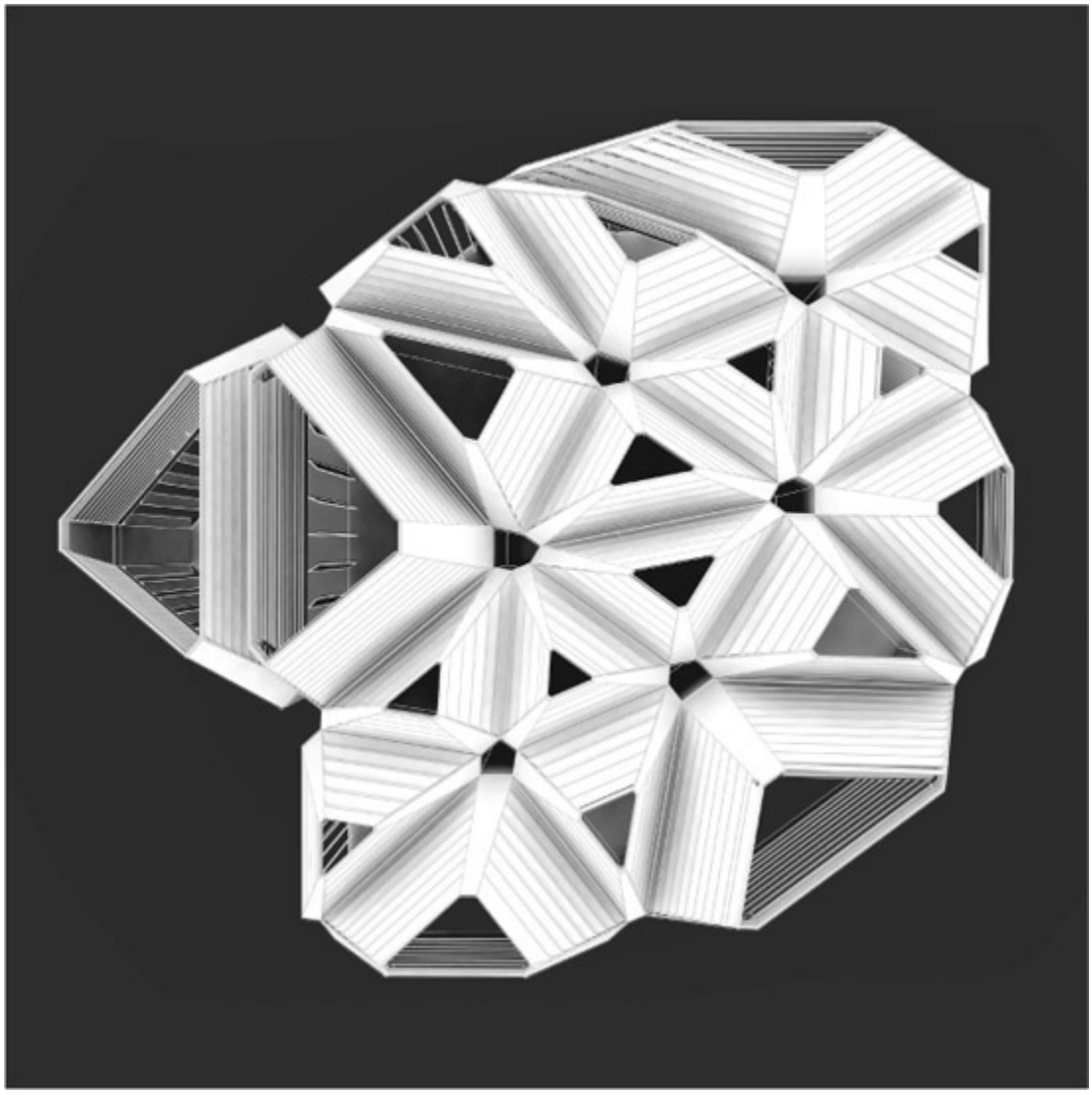


Figure 32.2 OPENSYSTEMS Architecture, Laminae: The project illustrates a differentiated and performative envelope attempting to overcome the existing dichotomy between standardization and the need for diversity and change in environmental structures. The design uses parametric design protocols to develop a semi-modular construction formed by the aggregation of differentiated triangular units.

Hyperarticulation of differentiated envelopes

Interior space can be defined as the boundary that differentiates the exterior envelope of the building with the inside. Difference in temperature, humidity, light condition, and sometimes even pressure is what makes the interior controlled environment of architecture different from the surrounding environment. Gregory Bateson explained:

> What is it in the territory that gets onto the map? We know the territory does not get onto the map. That is the central point about which we here are all agreed. Now, if the territory were uniform, nothing would get onto the map except its boundaries, which are the points at which it ceases to be uniform against some large matrix. What gets onto the map, in fact, is difference, be it a difference in altitude, a difference in vegetation, a difference in population structure, difference in surface, or whatever. Differences are the things that get onto a map.[5]

The definition of a performative envelope, however, allows for the articulation of an interior spatiality that no longer statically provides a homogeneous condition as a result of a formal and programmatic search. Instead, a heterogeneous spatial condition is achieved through the hyperarticulation of the building envelope by means of differentiated material organization.[6] Moving away from the idea of a homogeneous interior to embrace a truly differentiated heterogeneous spatiality allows for a deep reconsideration of the traditional dichotomy between form and function in architecture.

A new sensibility is emerging, one that uses computational materials to establish a new relationship between material, structure, and performance. The exploration for a truly heterogeneous space demands the articulation of performance-driven built forms. Aligning with the great legacy of pioneering architects such as Frei Otto, a new sensibility for the articulation of form, conceived as the result of a form-finding exercise, opened up extraordinary possibilities to connect performance, differentiation, and heterogeneous spaces. The possibility to collect and

manage large amounts of data allow for integration of information, through computational processing, within the fabric of the architectural envelope. Information-rich, heterogeneous environments are the result of a process of management and cross-fertilization of data within a single integrated design process. As a result, the continuous variations of building components allow for the actualization of a truly responsive, differentiated spatial condition. Whereas modern and postmodern architecture sought for homogeneous spaces, undifferentiated fields provided a homogeneous environment, a new type of heterogeneous space is emerging: one that seeks difference in kind and in degree, and that can no longer – or not only – be described for its extensive characteristics. Rather, it is experienced through its intensive qualities of visual porosity, humidity, light, ventilation, etc. It is now possible to think and design forms that, through their performative quality, are able to reinvent function. Heterogeneous interiority can be sought by means of a differentiated envelope.

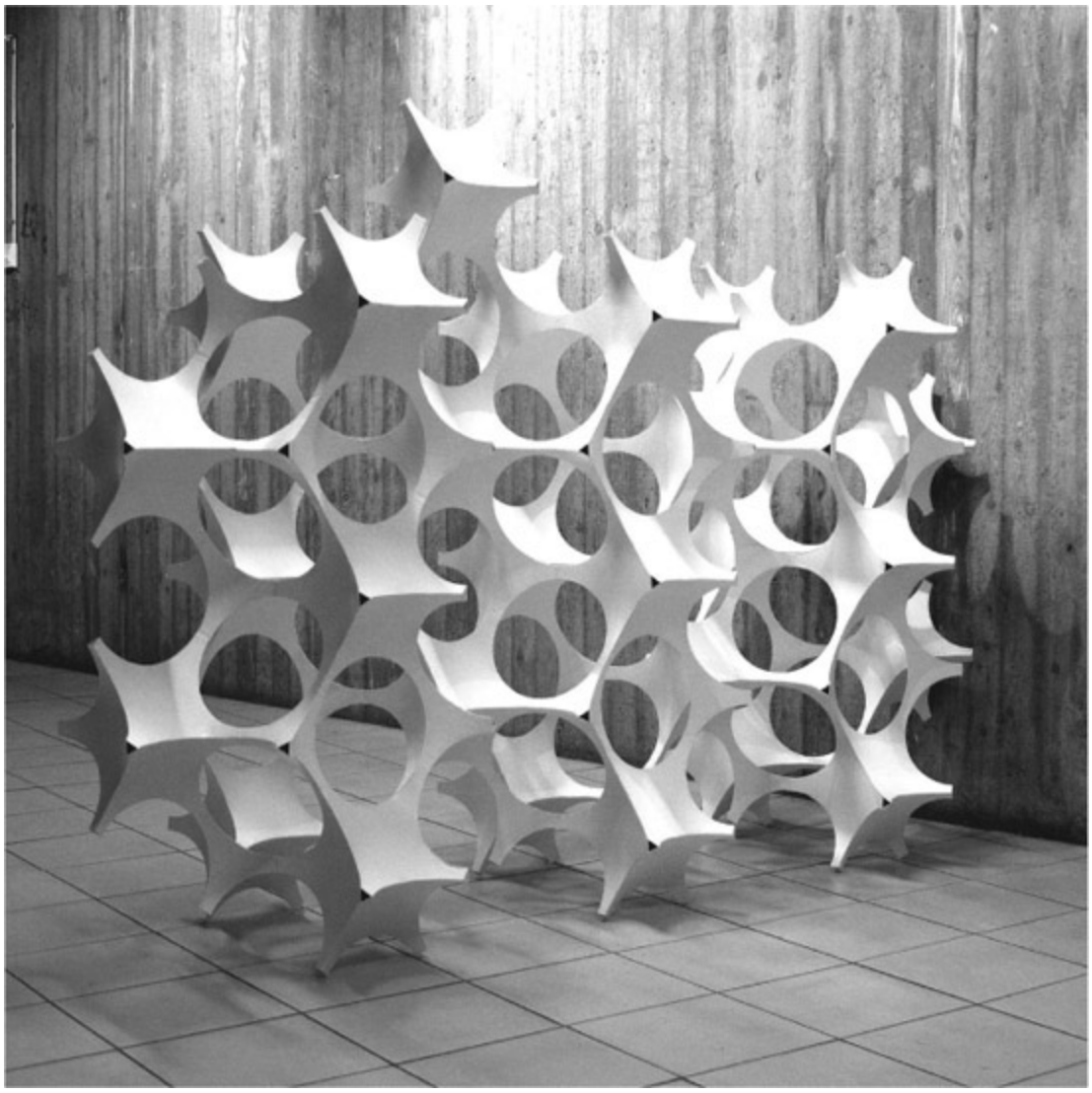


Figure 32.3 OPENSYSTEMS Architecture, Diatomics: The project explores the agglomeration of cellular components within a self-supporting assembly to be employed as vertical partition as well as a structural system. The prototype is formed by two modular components: the tetrahedral component which branches in three directions and a larger cubical "cell" which branches in eight different directions.

The opportunities offered by material science, new manufacturing processes, and computational design open the doors to a more profound understanding of interior space in architecture. The challenges of contemporary interior architecture require new spatial answers. A more fluid articulation of program, as well as the pressing demand for a more

sustainable built environment, are paving the way for an interiority that is increasingly driven by performative parameters: new functional organization in the work environment (such as coworking office spaces), looser boundaries between working, living, and leisure spaces, and the demand for a more performative understanding of matter, program, and form. New performative envelopes have yet to be explored.

Notes

1 Robin Evans and Pamela Johnston, "Translations From Drawing to Building and Other Essays", AA Documents (Architectural Association, 2003).

2 Alejandro Zaera Polo, "The Politics of the Envelope", *Volume Magazine*, p. ii.

3 Hashim Sarkis, *The Paradoxical Premise of Flexibility, CASE: Le Corbusier's Venice Hospital* (Munich: Prestel Publishing, 2002).

4 One of the first manifesto-projects of this kind was OMA's *CongrExpo for Lille*. The project was part of a vast master plan for the French town of Lille named EuraLille. CongrExpo is a cultural center and is an example of a new kind of urban architecture. "CongrExpo is 300 metres long and has a very diagrammatic organization, with three major components: Zenith, a 5,000-seat concert hall; Congress, a conference center with three major auditoriums; and Expo, a 20,000sqm exposition hall. In the east-west direction, each of these components can be used independently, but openings between the components make it possible to use the building as a single entity on the north-south axis, to mix programs, to generate hybrids."

5 Gregory Bateson, *Steps to an Ecology of Mind* (Chicago: University of Chicago Press, 2000), p. 457.

6 Michael Hensel, Christopher Hight, and Achim Menges, *En Route: Towards a Discourse on Heterogeneous Space Beyond Modernist Space-Time and Postmodernist Social Geography* (Wiley: AD Reader, 2009), p. 7.

Chapter 33

Measuring the human dimension

Domestic space, materiality, and making in Japan

Zeke Leonard

> *It was a satisfying feeling when you managed to fit all of the parts into the right place.*
>
> — Toshio Odate, Craftsman and Tategu-shi[1]

When Arata Isozaki published his book of essays titled "Japan-ness in Architecture," he stated his intent to identify built environments as "textual space," that is, spaces that can be *read* in a particular way.[2] A building read through a lens of "Japan-ness" holds up an external gaze on traditional Japanese architectural icons to define the cultural stance(s) that created them. Isozaki writes, "it might be said, the *kenmen-ho* [a method of defining a built space] comprehended architecture both *spatially* and *performatively*."[3] Isozaki identifies a performative-spatial method of describing the built environment that is specifically Japanese. His methodology grew out of a culture that had (and still has) a singular

relationship with materiality, in which form is traditionally defined by materials and the way they are manipulated. As Toshio Odate explains, it is rare in Japanese traditional architecture to varnish or paint a surface, meaning that both the materiality and the method of working that material remains visible and accessible to the senses.[4] This is the core of "Japan-ness": a contrast between *sakui* (artifice) and *jinen* (nature/becoming). Isozaki writes, "in any event, we shall construe *sakui* – representing the constructive and objective architectonic will – as classically Western in nature, and *jinen* – representing a spatial and performative architectonic will – as belonging to Japan."[5]

Walking into an authentic Edo-period Japanese *machiya*, or traditional Japanese live/work urban structure, for example, performative nuances are striking for someone who is unfamiliar with this architectural typology. Research on traditional Japanese architecture provides an understanding of the different types of *shoji* (screen or door) in the built environment offering a carefully moderated entry sequence and change in floor plane defined by different interior spaces. When Isozaki describes "direct exposure of materials, as well as overall simplicity and lightness," the reader could be excused for assuming that the "exposure" he references is primarily visual exposure with perhaps a secondary exposure of select materials to the hand.[6] Familiarity with traditional Japanese architecture would allow for a deeper understanding, that the sense of touch is also experienced through the soles of the feet, as it is traditional to remove one's shoes before entering a traditional Japanese interior.

Without having been physically in a room with grass *tatami* (soft mats) on the floor, paper-and-spruce shoji as wall planes, and a *kasa-buchi* wooden ceiling, it is unlikely to know that these materials are exposed to senses beyond sight and touch. A large part of the performative identity of these spaces, however, is olfactory. They have a smell; they have a particular sound when they are walked or sat upon. That an interior might engage multiple senses is nothing new, but the locality and materiality of a traditional Japanese interior provide a multisensory experience that is highly specific. The effect is not artifice – it is perhaps even accidental – but the

impact is profound. These other experiential qualities are unfamiliar to the point of seeming outlandish to an occupant that has not experienced them before, but they are inescapable to whoever inhabits the space. Zoologist and influential orientalist Edwin Morse wrote in 1886:

> The owner of this house has often welcomed me to its soft mats and quiet atmosphere, and in the enjoyment of them I have often wondered as to the impressions one would get if he could suddenly be transferred from his own home to this unpretentious house, with its quaint and pleasant surroundings… . Gradually the perfect harmony of the tinted walls with the wood finish would be observed.[7]

Attention is drawn to tatami, as they are the spatial building block of the traditional Japanese residential structure, and with good reason; a tatami is quite literally the measure of a human body. At 1 ken (about 1.8 meters) by 1/2 ken (about 0.9 meters), a traditional tatami describes the amount of space that a single person can comfortably occupy when prone. Two tatami next to each other make a space that is 1 ken by 1 ken, called a *tsubo*. Tsubo are used in Japan to describe spatial area much in the way that "square footage" is used in America (Figure 33.1). Instead of using only one part of the human body to describe the area, however, Japanese tradition uses a unit that is based on the entire human body as a ruler. One effect of this method is that spaces retain a human scale: as tatami are laid out it is uncommon to find a space that is more than about ten tatami without some division of space, whether a change in floor plane, a sliding screen, or some other method.

Materiality and interaction

The woven grass mats become particularly important given the cultural expectation for the user to remove their shoes when entering the space. A person is seated on the floor as they occupy the space and comes in direct contact with the floor plane in several important ways: the soles of bare feet

engage with the floor plane, experiencing the slight give and the soft texture of the woven grass, and when seated on the floor the lower body and hands interact directly with the floor plane in a way that is rare in Western cultures (Figure 33.2). Frank Lloyd Wright wrote with surprise, "the floors of these Japanese homes are all made to live on – to sleep on, to kneel, and eat from, to kneel upon soft silken mats and meditate upon. On which to play the flute, or to make love on."[8] However, the importance of this interaction is not so much about the floor as the plane; it is about the material interaction. It would be a very different experience to engage a tile floor in the same way, for example. It is the materiality here that matters, and the materiality is defined by geographic necessity: in an unheated *machiya* (wooden townhouse), there is a need for some insulation on the floors, which the tatami provide. Likewise, tatami are traditionally made of rapidly renewable resources that are locally available in most parts of Japan. As the user is sitting on the tatami, touching it and smelling it, there is a reminder about place, about locality, and, by extension, about identity. "I am from here in the way that this tatami is from here, and I belong here in the way that the tatami does," might be the fleeting thought in a person's mind as they sit. In this way, the user becomes a yardstick for measuring space in two ways: physically the tatami is based on human dimension, and the materiality of the tatami contributes to a phenomenological measurement, an emotional yardstick that is about sense of place, cultural identity, and belonging. In addition, though machinery is used to make tatami, there are elements that are still created by hand; it is a made object in a very particular way; it was made by a person somewhere.

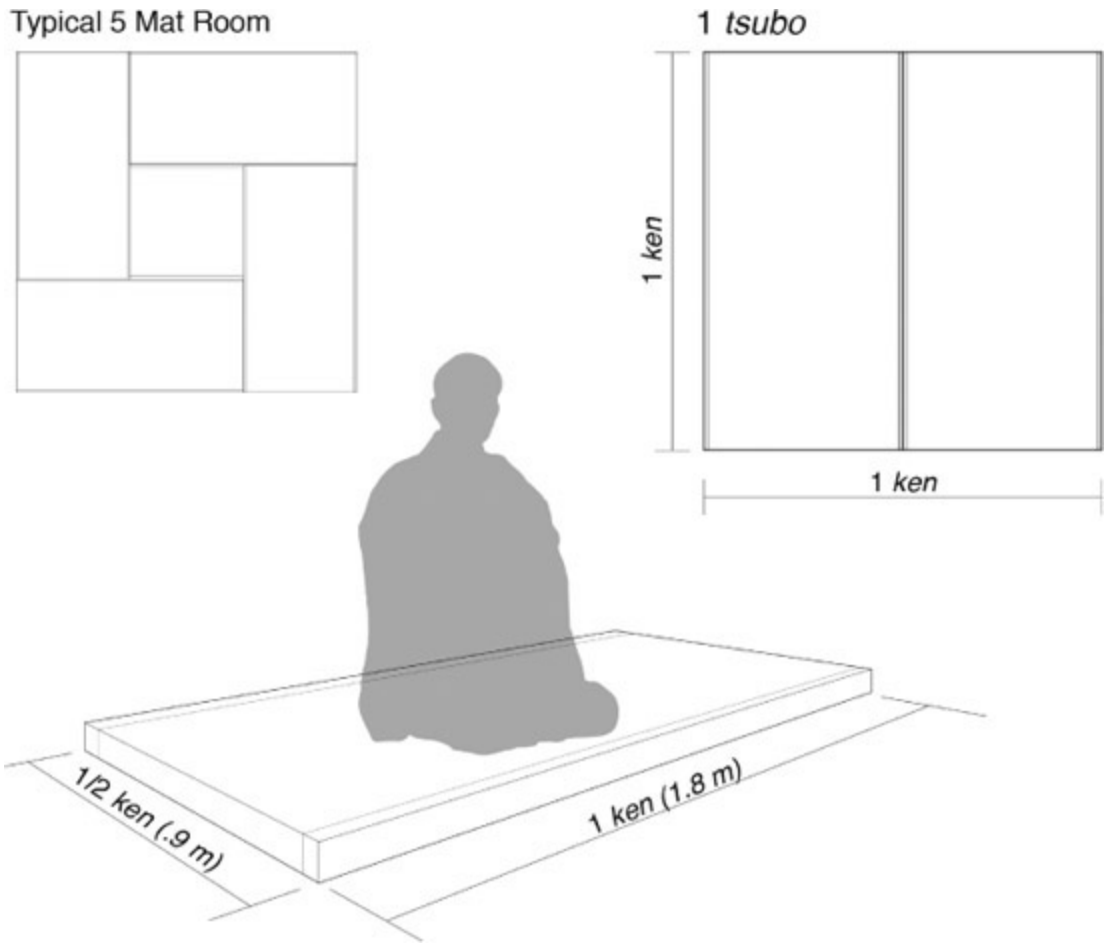


Figure 33.1 Though the traditionally sized tatami mat can be combined in diverse configurations, the original unit, at 0.9m × 1.8m is retained, drawing attention to the scale of the human form and making the occupant central to the scale of the built environment

Figure 33.2 A "*nihonma*," or traditional-style interior built in response to human scale and fabricated of local or regional natural materials

Interiors and identity

Although it is unlikely that materiality is at the forefront of the mind of every person sitting on a tatami in Japan, it is there: materiality and the implications of materiality are embedded in the built environment. Toshio Odate, a *shokunin* (master craftsperson), writes, "Japanese appreciate tight *masame*, or quarter sawn grain, more than Westerners do, probably because, as I earlier mentioned, they do not use paint. Not only the craftsmen know this, but people in the common society share this value too."[9] There is a semiotic reality to the floor covering: it was created by hand. It is made of local (or perhaps regional) renewable materials, and it feels and smells comforting to the person sitting on it. Arguably, a version of this semiotic reality is true for any interior. The linoleum on the floor in many kitchens is

a Western version of the tatami, culturally appropriate and socially descriptive. The difference is found in the materiality and the sensual interactions: though materially appropriate for a kitchen floor, the smell and feel are the product of industrial manufacture, the implication of maker's hands far removed. There is also a performative difference: the feel of linoleum on a substrate does not welcome a sitter or, in fact, imply sitting at all.

Materiality often influences decision-making engaged by designers: the type of material chosen drives the kinds of forms that can be made, the scale that is possible, and, as mentioned above, the emotive reaction to the designed space or object. This is what iconic furniture maker George Nakashima meant when he wrote about "the necessity of matching each piece of wood to its ultimate use."[10] It is not unusual for a furniture designer to deeply consider materiality; it tends to be the stock-in-trade. If a chair is made out of wood, the user is physically affected by that choice in a very direct way. The user's skin will touch the object where the maker's hands did; in a sense they are only removed by one degree from touching each other. As the scale of the design shifts away from the object toward the built environment, the relationship of the designer to materiality shifts as well. It becomes more distant.

Culture & materiality | occupancy & response

In the West, the designer is often is less focused on whether the user will physically engage with materials in a built environment. Materials are approached as an aesthetic identity, or at best, a shared aesthetic/functional identity (in the sense of supporting a color scheme, for example, or being easy to clean), but occupants often do physically engage the materials. They lean on the walls and counters and they occasionally sit on the floor. In a *nihonma*, or "Japanese style room," not only is the user expected to engage the floor plane physically, but often shoji are manipulated simply by grasping the frame and sliding it in its *shikii* (threshold). The connection between maker and user is direct and inescapable. Odate wrote, "the

shokunin has an obligation to work his best for the general welfare of the people."[11] Part of that obligation emanates from the fact that the user will be directly involved with the work of the shokunin's hands, and that there will be a small degree of difference between the maker and the user. Morse's observations illustrate the importance of this element of traditional Japanese architecture:

> The absence of all paint, oil, varnish, or filling, which too often defaces our rooms at home, is at once remarked… . On the contrary the wood is left in just the condition it was when it left the cabinetmaker's plane, with a simple surface, smooth but not polished.[12]

These aesthetic choices regarding materiality were not traditionally made by an architect, but by an overseeing eye. In fact, Isozaki tells us, "It is true that, in Japan, there was no word for "architecture", nor were there architects as we recognize them today. Nonetheless, buildings *were* undeniably made, in which unique characteristics might be discovered."[13] We can take from this that individual aesthetic choices, instead of being made by an architect, designer, or other aesthetic overseer, were made by the shokunin who were working on the space together – the *sukiyadaiku* (residential carpenter) framing the space with timbers, the *tategu-shi* making the shoji, the *tatmiya* making the tatami. When each worker has as a baseline intention, "the general welfare" of the inhabitant, the resultant interior is a symphony of materiality, level of finish, and aesthetic choices. In this way, as Isozaki indicates, an aesthetic *arose*, rather than being created out of whole cloth. Of course, there now exists to the outward eye a very definite set of qualities that contribute to "Japan-ness," but these came into being over generations and were slowly codified and developed with the user never being far from consideration (Figure 33.3).[14]

This consideration of the user (primarily in the design process for a space or an object) is a practice that Western interior architects have increasingly moved away from in the years since World War II. The

National Association of Home Builders (NAHB) reported in 2006 that the average American home grew from 300 square meters in 1950 to 716 by 2004.[15] As prestige of large spaces trumps human scale and user experience, the inhabitants of these spaces are increasingly diminutive when seen in their spaces, and objects that are chosen to fill these spaces tend to be scaled to fit the space – rather than the user. To create these massive spaces (the NAHB reports that the average American living room is about 100 square meters, or roughly 1/3 the size of the entire average house 60 years ago), materials that cover a great deal of area efficiently and rapidly must be utilized. In American structures, this typically means manufactured materials such as sheetrock and plywood are used, often with a minimum of molding as a cost-cutting measure. This sacrifices the indication of the hand (evidence of the maker) for expediency, and in doing so it ignores the emotional yardstick that might be applied by the user. The reaction shifts from being space based to object based; rather than react to the materiality and aesthetics of the *space*, we react to the materiality and aesthetics of the *objects in the space*. As spaces are increasingly designed to ignore the physical and emotional yardsticks, with the human as the defining unit, they become more alienating.

Figure 33.3 Larger interior spaces, such as this one in a nineteenth-century house and shop in Takayama Village, are divided by shoji to diminish their overwhelming size

Pursued in the opposite direction, however, it is possible to make spaces and objects that resonate deeply with the user, engage the senses, and have longevity. Highly prolific and well-known furniture designer and maker George Nakashima wrote that a craftsman needs "the dedication, devotion, concentration, and love to build as perfect an object as possible."[16] This raises the question: Can we bring a compassionate approach to materiality and scale into a twenty-first-century Western interior? Culturally, it would be inappropriate to forgo click-lock flooring and white painted sheet rock for tatami and shoji, but can we engage the senses in a complete way in our own residential interiors? Are there choices that we can make, using the same sensual yardstick that can produce similar results culturally?

Methods of work

The answer, of course, is "yes." Humans respond to other humans. An object or space that bears the marks of another human, whether it is the maker or a long-time user, can have a resonance. It is this resonance that drives us to store and display items in museums or to preserve old buildings. This resonance, however, does not have to apply only to very special or very old objects/spaces – it can also apply to our homes. In fact, this activity is already applied to personal objects. It is the rare person who does not, when prompted, bring out an object, whether it is an old Bible, vegetable peeler, quilt, sewing kit, piano, or something else altogether and say with pride, "This belonged to my grandmother, or my uncle, or has been in our family for generations." From an autoethnographic stance, there is a predisposition to respond to and venerate age. It is this same impulse that drives some people to collect autographs – the evidence of being at only one degree of removal from a person the collector admires. It is but a short leap from this human-to-human connection with the object as mediator to a human-to-human connection with the materials in a space as mediator.

There is a difference between the "common society" in Japan as cited by Odate and that of the West. Often clients look to interior designers and architects to define such abstract terms as "worth" and "value." Too often, as John Stanislav Sadar writes, the "immaterial aspects of our environment are somewhat foreign ground for the architect."[17] In his engaging article "Inhabiting Materials, Managing Environments," Sadar explains,

> The work of the architect happens mainly in the studio, where it progresses using scaled-down, and necessarily enfeebled models of conditions in the world… . Perhaps the only way of really coming to appreciate [immaterial phenomena] is to design with them, at full scale, through corporeal experience.[18]

Obviously, it is unlikely for a designer to be the builder of a space of any reasonable size, but there is another way toward emphasizing these "immaterial phenomena": engage the makers of objects, installers, and

tradespeople that are realizing the space in the design process. Craftspeople embody an intimate knowledge of and experience with the materials that surround the user in a space. Their insights, gained from long experience in their respective fields, can be synthesized into a space in which the materials work in harmony with the overall design vision and respond thoughtfully to the "emotional yardstick" of the end user. By embracing Isozaki's "direct exposure of materials," it is possible to emphasize the made space rather than the manufactured one. This affords designers the opportunity to create spaces that are beautiful and functional, employ renewable and locally harvested materials, and offer a resonance and comfort that celebrates and respects the user.

Notes

1 Toshio Odate, *Making Shoji* (Fresno: Linden Publishing, 2000), p. 17.
Note: A "*Tategu-shi*"is a master craftsman that works with wood specifically.

2 Arata Isozaki, *Japanness in Architecture* (Cambridge, MA: MIT Press, 2006), p. ix.

3 Ibid., p. 27; (brackets added by the author).

4 Odate, *Making Shoji*, p. 11.

5 Isozaki, *Japanness in Architecture*, p. 29.

6 Ibid., p. 12.

7 Edward Morse, *Japanese Homes and Their Surroundings* (Boston, MA: Tincknor and Co, 1886), p. 115.

8 Frank Lloyd Wright, *An Autobiography* (New York: Duell, Sloan, and Pierce, 1943), p. 175.

9 Toshio Odate, *Making Shoji* (Fresno: Linden Publishing, 2000), p. 11.

10 George Nakashima, *The Soul of a Tree* (Tokyo: Kodansha International, 1981), p. 117.

11 Toshio Odate, *Japanese Wood Working Tools: Their Tradition, Spirit, and Use* (Fresno: Linden Publishing, 1984), p. viii.

12 Morse, *Japanese Homes and Their Surroundings*, p. 111.

13 Isozaki, *Japanness in Architecture*, p. 27.

14 Ibid., p. 27.

15 As reported by NPR: Margot Adler, "Behind the Ever-Expanding American Dream House", NPR Your Money, www.npr.org/templates/story/story.php?storyId=5525283 (accessed 24 July 2015).

16 Nakashima, *The Soul of a Tree*, p. 120.

17 John Stanislav Sadar, "Inhabiting Materials, Managing Environments", *Studies in Material Thinking: Inside Making* 9 (2007), www.materialthinking.org/volumes/volume-09 (accessed 28 July 2015).

18 Ibid.

Part seven

Occupancies

Chapter 34

To dwell means to leave traces

Modernism, mastery, and meaning in the house museums of Gaudí and Le Corbusier

Georgina Downey

Houses of architectural significance built by architects for themselves (and later converted to museums) have, through the modern period, been on the itineraries of not only tourists but also architecture students. The better-known architect's house museums of the nineteenth and twentieth centuries that attract visitors include those of Alvar Aalto, Walter Gropius, Frank Lloyd Wright, Victor Horta, Le Corbusier, Charles Rennie Mackintosh, William Morris, Carlo Mollino, Bruno Taut, Harry Seidler, John Soane, Jørn Utzon, Henry van de Velde, Charles Voysey, and Otto Wagner. These architects' homes – conserved, signposted, and given museal treatment – have not only helped cement the legacy of the architect in question, but have also provided architecture, design, and art history students an opportunity for access to "hands-on" sites of learning.[1]

In *The Architect's Home*, Gennaro Postiglione proposes that architect's house museums are valuable because, "as sites, [they] always

engage *two* lines of interest: they are works, and they afford biographical testimony to their creators."[2] Architect's house museums, he offers, represent "a more *sturdy* relation between occupant and dwelling … which allows us to determine the real, actual intention prevailing in the organization of the daily living space and the private work space."[3] We assume a direct relationship between an architect's practice and their ideas for their own homes, and in the course of a visit, we hope to encounter and to understand their conceptual "program for living" by walking through the house. Thus, as Postiglione asserts, we need to preserve the many – and in some cases deteriorating – modernist architects' houses because they stand as "poetic manifestos" to the creative spirit of the architect.[4]

The historic house as museum stands as a site of memory; it reflects its times, its environment, and its encompassing society with appeals to the mind and heart that continue to attract growing numbers of visitors around the world. Furthermore, as observed by a recent graduate student,

> By their very nature, house museums give visitors the ability to stand inside of history. The objects in their collections are not housed in a building designed for that purpose, but rather, the building itself is part of the collection.[5]

House museums can also convey narratives about the occupant(s) that can be told in no other way; they can convey stories told in the round, through all the senses, which is why house museums are sites of pilgrimage where visitors attempt to re-experience past senses of interiority and spatiality. Above all, they contain traces, objects, features, and small signs of dwelling that provide a tenuous journey of memory and interpretation. This chapter explores the house museums (and once homes) of two colossi of modern architecture, Antoni Gaudí and Le Corbusier (Charles-Édouard Jeanneret-Gris), with focus on, respectively, Casa Gaudí in Park Güell in Barcelona and Corbusier's beach cabin, the Cabanon, in Roquebrune-Cap-Martin on the French Riviera. Both of these house museums, one grand, the other modest, were designed by the architects themselves (in Gaudí's case in

partnership with his "right hand man," Francesc d'Assis Berenguer i Mestres). The major issue bearing on this analysis is how do these conserved interiors function in relation to the architect's public persona, and what role do traces of habitation have to play in shifting perceptions and the development of new discourses on their work and lives? The meaning of trace used here evokes that of Elizabeth Grosz, who describes this Derridean notion as a kind of linking signature between author and text, and insists there is always a "trace," a kind of infusion or double bind, between the interior and exterior of the text. Grosz therefore counsels us,

> The signature cannot authenticate, it cannot prove, it cannot make present the personage of the author; but it is a remnant, a remainder of and a testimony to both a living past and a set of irreducible and ineliminable corporeal traces.[6]

"Famous person house museums," of which the architect's house can be classified as a subcategory, have been described by Pierre Nora as *lieux de mémoires*, or sites of memory.[7] Yet the notion of a site of memory that was once somebody's *home* is reliant on the modern conception (explored by Walter Benjamin, among others) that the domestic interior is both an extension and a representation of the modern individual. Consequently, when these are recreated and given museum treatment, we are considering a kind of double modernist text. Trevor Keeble puts this neatly when he proposes that the period room in the museum represents "the layering of one age through the optic of another." He contends that we have to be continually aware that history is made and remade according to the needs of the present, since its very premise that "this is how things really were," periodizes experience into incommensurable slices of history; thus the house museum cannot avoid some key tropes of modernity, including its utopian and/or dystopian polemics.[8] Jeremy Aynsley agrees, claiming further that modern house museum visitors are aware of the manipulability of the period room as a text, with a "use, life, and afterlife."[9] Aynsley concludes, therefore, that the *actual* value of these "intrinsically modern"

forms of historical text may lie, not in what the spaces themselves reveal as "authentic" documents, but rather in what they reflect about the attitudes, values, and ideologies of those presenting them (here he means visitors in addition to curators and other custodians).[10] Thus, readings of the interiors of architect's house museums will constantly shift in relation to the theatrics or forms of display and didactics selected by curators, which constitute constructed discourses in themselves.

The Casa Museu Gaudí was originally constructed in 1905 as a display home in the Park Güell housing the estate owned by wealthy aristocrat Eusebi Güell, a friend and patron of Gaudí's. For a variety of reasons, development plans for the estate took quite a different direction after 1914, with only one other plot turned into a house. Gaudí began building an interrelated series of extraordinary monuments, and the rest of the estate overlooking Barcelona became a kind of symbolic universe – a world famous public park – and, since 1984, a UNESCO Cultural Heritage of Humanity site.

Casa Gaudí, the three-story house which contains the museum, was designed under supervision by Francesc Berenguer, Gaudí's main collaborator, and the plans were signed by Gaudí (as Berenguer was not then technically qualified). Gaudí occupied the home from 1906 to late 1925, first with his father and niece, then with visiting Carmelite nuns who watched over his health.[11] After he died on June 10, 1926, the house was sold to Italian tradesman Francesc Chiappo and his wife, Josefina. They moved there in December 1926, and since they were enthusiasts of the architect, they started calling the house "Casa Gaudí." In 1960, the Friends of Gaudí Association bought the house from the Chiappos's heirs, and in 1963 it opened to the public as a museum. In 1992, the Construction Board of La Sagrada Família Foundation acquired the Gaudí House Museum, and since then has used the profits from the house museum to fund ongoing construction of the basilica – still unfinished despite having commenced in 1882.

The museum entrance is on the ground floor, and continues on the first and second floors, with a museum shop in the basement. Casa Gaudí is

presented primarily as an exhibition space for furniture. Placing Gaudí's most daring pieces in a domestic setting allows visitors to appreciate his designs in context and in the round. While the furniture here in most cases was designed specifically for Gaudí houses elsewhere, notably for Casa Batlló (one of Barcelona's most visited house museums, located in the Old Town) and Casa Calvert, these locations display few original items of furniture, so being able to study a large portion of the collection at Park Güell is a drawcard and provides a complement to other Gaudí sites. Didactics are provided in English, Spanish, and Catalan in the form of wall texts, and there is even a video using a lithe dancer demonstrating the postural variations for sitting in Casa Batlló's famous *Double Bench* (1907) using a rotating three-dimensional view. The rest of the ground floor interior architecture features the original mural-covered ceilings, the highly modern kitchen, and the bathroom. In contrast, rooms upstairs have been curated to suggest some of the private life of Gaudí, and these are furnished with a small collection of the architect's personal effects. It is in the bedroom in particular where some trace of the architect's daily life is preserved. His Catholic devotions are clearly evident through the stack of prayer books, the narrow single bed, the crucifix, and the *prie dieu* with a wicker base (Figure 34.1). Here, the contemporary viewer cannot help but wonder at the astonishing contrast between the quite otherworldly munificence of La Sagrada Familia and the monastic – even ascetic – interior decor of the man who designed it and who commuted daily between these two extraordinarily contrasting interiors.

Figure 34.1 Gaudí's bedroom at Le Cabanon with prayer books, the narrow single bed, the crucifix, and the *prie dieu*

Image credit: Georgina Downey

These ideas are allowed to play, without any foregrounding, in the display theatrics of the exhibition areas of the museum, in a manner that subverts at least some of Gaudí's mystique and reminds us again of Keeble's notion of the shifting optics and layered meanings of the period room/house

museum display. In another subtle allusion to the traces of Gaudí's dwelling, a wall text in an upstairs gallery devoted to the telling of the history of the house notes that Gaudí's friend and collaborator, the sculptor and creator of several works in the garden and for La Sagrada Familia, Llorenç Matamala i Piñol, often "slept in the house." In the context of the statement, it is apparent the writer intended to imply that Matamala provided some much needed company (and there may be some further confusions as a consequence of translation), but this said, the twenty-first-century reader of this text could not possibly avoid the allusion to a cherished, if not a romantic, relationship. If this were so, it would constitute a radical new reading of Gaudí's life. Much has been written of his life; in fact, there have been more books and articles written about Gaudí than about any other architect in the modern – or any other – period.[12] Yet the question of his private life (aside from an early heartbreak from a certain Pepeta Josefa Moreu in 1884) has yielded to view no other intimate affairs, thus the conclusion has been that he was celibate.[13] Gaudí's *vie privé* may be shrouded in mystery; however, from his time as a young dandy to that of an older ascetic, he had a close circle of male friends. Furthermore, he also obviously had the aptitude and ability to lead large teams of male construction workers through extremely complex and new building methods, so that the homo-social orientation of his life has been observable, and yet, until this hint in the wall text, it had not been inferred.

Le Corbusier's Cabanon is another architect's house museum that enfolds a succession of enigmas; however, here recent scholarship has revealed passions, envy, and violence that have reshaped the careers, reputations, and identities of all involved – particularly of the architect himself. The Cabanon stands on a steep slope, between Monte Carlo to the west and Menton to the east, on the coastline of the French Riviera. It overlooks the small sandy beach of Roquebrun, a bay sheltered by the promontory of Cap Martin and extending out toward Monaco. The Cabanon is rendered entirely in wood and faced in split pine logs like a Canadian log cabin. "Robinson Crusoe-ish" on the exterior, the interior is a tender poem to the rationality of early modernism and draws on Le Corbusier's use of

prefabricated built-in units, based on the dimensions of the *Modulor* (a mathematical benchmark based on the height of a man with his arms up) he had used three years earlier for *Unité d'habitation* in Marseilles. These "interior shell" components were built by colleagues of Corbusier, and pioneers of industrial construction in their own right, Charles Barberis and Jean Prouvé, who had the sections made up in Ajaccio, Corsica. Barberis and Prouvé then arranged the delivery of the presized pieces to the tiny house by boat in mid-1952. Partially hidden in eucalyptus and vine thickets, it stands a stone's throw above Eileen Gray's celebrated 1926–29 modernist tour de force, E.1027, the roof of which is about level with the terrace in front of the cabin (Figure 34.2). In 1979, the Cabanon was acquired from the Foundation Le Corbusier by the Conservatoire du Littoral, an oceanfront land conservancy, which turned over the management of the tours of the cabin to the tourist department of the town council of Roquebrune-Cap-Martin. The building was designated a French historical monument in 1996.[14]

Figure 34.2 Exterior, Le Cabanon with view over rooftop of Eileen Gray's E.1027

Image credit: Georgina Downey

Like Casa Gaudí, the Cabanon was a significant long-term place of residence. At a tiny 3.66 square meters, the Cabanon, while modest in every way, played a major role in Le Corbusier's life. It shares a partial wall with a small bistro, *L'Étoile de Mer*, accessed through a connecting doorway only seventy centimeters wide. Thus, in the summer, Corbusier and his wife, Yvonne, took all of their meals at the restaurant and sat under the vine-covered terrace. The cabin is presented in a completely different manner than Casa Gaudí, and yet its premise in terms of constructing memory for visitors by means of interiority is the same. At the time of writing, the Cabanon was only open to visitors twice each year through pre-booked tour groups arranged through the town of Menton's tourist center. The need to control visitor numbers is driven by a variety of factors – most significantly the fact that descendants of a local family, who entered into an agreement with Corbusier in the early 1950s about connecting the bistro to the cabin, still own and vacation on the property. The tour of the Cabanon is conducted by guides from the tourist council in both French and English. It includes guides around the exterior and entry into both the bistro (featuring Le Corbusier's murals on the bar), the Cabanon itself, the Unités de Camping, as well as a look inside the tiny storage shed southwest of the cabin (apparently built by Le Corbusier himself to work in bad weather and to store paintings and drawings) (Figure 34.3). It is comprehensive, with a full and detailed account of the conception of the Cabanon, acquisition of the land, the build, and significant architectural features, as well as its relationship to the *Modulor* and other contemporary projects of Le Corbusier's in the mid-1950s.

The tour delineates how, among other issues of lifestyle and friendship, the Cabanon was critical to his thinking about modern space. Le Corbusier is identified as one of the major architects of the twentieth century and as a leader in terms of the modern movement, but not, in fact,

as “god-like.” The site’s current interpretation illustrates how the layering and lenses of contemporary readings of the space have dramatically altered the kind of stories that are currently told within it and about the reasons for its significance, and this is often driven by scholarship. Witnessing firsthand Corbusier’s shed, Yvonne’s sleeping platform, the *prie dieu*, and the proximity between the Cabanon and E.1027, recalls Postiglione’s “more sturdy relations” between dwelling and occupant where these relations manage to in some way shock, overturn, or subvert the main discourse being presented. One humorous anecdote highlighted that while Corbusier’s built-in bed platform was under an airy window, Yvonne’s pillow laid approximately twelve inches from the curtained off toilet area. This story is an effect of postfeminist inquiry within architectural history and theory, itself shaped since the 1980s by poststructural theory. Stories about “masters” of modernism are no longer complete without reference to their companions, intimates, lovers, and supporters, so the idea of the interior as constructed discourse highly shaped by gender has spread.

Figure 34.3 Tour group at Le Cabanon

Image credit: Georgina Downey

Similarly, the E.1027 murals story has been subjected to a sustained rereading by Beatriz Colomina, in her 1996 essay, "Battle Lines: E.1027," where she took a feminist and Freudian reading to the violent dramas surrounding the three closely sited buildings the Cabanon, E.1027, the bistro, and Unités de Camping, and scholarly attention turned to the

ruined relationship between Eileen Gray and Le Corbusier. In the summer of 1938–39, he defaced the pristine exterior walls of his neighbor (Irish architect and designer) Eileen Gray's E.1027 by painting eight large "murals" in what she called "an act of vandalism." Colomina has shown that the murals were an "effacement" of Gray's sexuality and genius, and were the consequence of Le Corbusier's psychosexual complexes.[15] Up to the present, Colomina continues to explore, write, and lecture on the E.1027 vandalism some ten years after her initial study and has confessed to being obsessed with the story. Colomina's scholarship has cleared up many misconceptions around Gray's authorship of E.1027 (attributed in the past to her lover Jean Badovici, and in some sources, Le Corbusier himself), and has influenced a generation of architectural history scholars, as well as creating a thirst among the general public for Gray's work and its implications for modernism.[16] Many tourists come not to see the Cabanon, but to see E.1027. A 2014 straw poll conducted amongst visitor groups revealed that about a third were Irish nationals who had come to find out more about E.1027 and the lower gardens of the Unités de Camping, which at the time was the site providing the closest possible view of the house. The interior can now be visited thanks to the Conservatoire du littoral de Alpes-Maritimes, but the fact that some thirty percent of the group had come to explore Gray's work instead of Le Corbusier's suggests a "shifting lens" of which stories are told, why, and how.

Both of these architects' house museums, pivotal in the lives of their occupants, are presented with differing curatorial analysis, and yet the materiality of the spaces trace back to corporeal occupation. In both architects' house museums, there is a deliberate curatorial tactic to leave interpretations fairly open; visitors are encouraged to think and experience the spaces as authentic, while what is and is not original is signposted. Casa Gaudí is presented not as a home, per se, but as an exhibition space, with the exception of two to three small rooms (bedroom, bathroom, and kitchen). Nonetheless, the sense of interiority is strong, supported by the inclusion of a few original artefacts. Even given the reduced access to original artefacts, the pieces that are on display allow for other optics and layered viewpoints

from the contemporary period. Moreover, whether the optics or layering of current readings of Gaudí's materials proposed here alter the major biographies is not in question, and yet they do bring a new Gaudí to light, one that may not have been possible even twenty years earlier; it opens new lines of inquiry in the process of his work via relationships with male friends, companions, and collaborators, in much the same way that Colomina's exploration of the psychosexual dynamic behind the defacing of E.1027 has altered scholarship on both Gray and Le Corbusier. Useful concepts such as Keeble's notion of viewing the house museum through the lens of the present age, along with Aynsley's concept of the house museum as a text with a "use, life, and afterlife," when allowed to work in conjunction with the trace that is signed as authentic or not, can permit the interiorities of the spaces to reflect attitudes, values, and ideologies of the present. We are then encouraged to make new and diverse readings of these architects' house museums, for as Walter Benjamin reminds us, "to dwell means to leave traces."[17]

Notes

1 In the mid-eighteenth century, at his École des Beaux-Arts, the gifted architectural educator Jacques-Francois Blondel "made full use of field trips ('*conferences sur les lieux*') to help students make the transition from theory to reality." Reed Benhamou, "The Education of the Architect in Eighteenth Century France", *Journal of Eighteenth Century Studies* 12, no. 2 (September 1989): 190.

2 Gennaro Postiglioni, *The Architect's Home* (Köln: Taschen, 2013), p. 9.

3 Ibid.

4 Postiglioni, *The Architect's Home*, p. 11.

5 Anna Jug, "Moving Forward: How Are House Museums Engaging With New Audiences, While Attracting Visitors Back?", MA Coursework Thesis, Curatorial and Museum Studies, University of Adelaide, submitted June 2015.

6 Elizabeth Grosz, *Space, Time and Perversion: the politics of bodies*, (New York: Routledge, 1995), p. 22.

7 A *lieu de mémoire* is any significant entity, whether material or non-material in nature, which by dint of human will or the work of time has become a symbolic element of the memorial heritage of any community (in this case, the French community). These may include places such as archives, museums, cathedrals, palaces, cemeteries, and memorials; concepts and practices; and objects. Pierre Nora and Lawrence D. Kritzman, eds., *Realms of Memory: Rethinking the French Past. Vol. 1: Conflicts and Divisions* (New York and Chichester: Columbia University Press, 1996), p. 27.

8 Trevor Keeble, "Introduction", in *The Modern Period Room: The Construction of the Exhibited Interior 1870–1950*, ed. Penny Sparke, Brenda Martin, and Trevor Keeble (London: Routledge, 2006), pp. 2–4.

9 Jeremy Aynsley, "The Modern Period Room: A Contradiction in Terms?", in *The Modern Period Room:* Ibid., p. 18.

10 Jeremy Aynsley, Ibid.

11 Gaudí's health was inclined to be fragile due to his untiring labors on his masterpiece La Sagrada Familia (1882–) and his mid-life conversion to an extreme form of Catholicism involving fasting, penance, and self-denial. Late in life, he took total lack of vanity in personal appearance to extremes, and when he was struck by a tram on June 7, 1926, he failed to get emergency medical treatment that might have saved him, since he was assumed to be a beggar. Rainer Zerbst, *Gaudí, 1852–1926: Antoni Gaudí i Cornet: A Life Devoted to Architecture* (Cologne, Germany: Taschen, 2002), p. 13.

12 James H. Grady and César Marinell, "Gaudí: His Life, His Theories, His Work", reviewed in *Art Bulletin* 59, no. 3 (September 1977): 457. "No other architect of the period [modernism] has been so thoroughly studied. Writings on Gaudí form one of the longest bibliographies of any architect of any time."

13 Gij van Hensbergen, *Gaudi: A Biography* (New York: Harper Perennial, 2003), p. 59.

14 Pilar Viladas, "Le Shack", *New York Times Magazine*, 1 April 2001, http://partners.nytimes.com/library/magazine/specials/20010325mag-leshack.html (accessed 8 June 2015).

15 Beatriz Colomina, "Battle Lines: E.1027", *Renaissance and Modern Studies* 39, no. 1 (1996): 96.

16 Tim Benton, "E-1027 and the Drôle de Guerre", *AA Files* 74 (2017): 123–143.

17 Walter Benjamin, *The Arcades Project*, trans. Robert Eiland and Kevin McLaughlan (Cambridge, MA: Harvard University Press, 1999), p. 9.

Chapter 35

Event-space

A performance model for spatial design

Dorita Hannah

Interior architecture shapes, articulates, and details both space and experience. It influences our quotidian existence generally through immersive settings designed to exemplify a contemporary condition and/or characteristics of specific occupants, environmental typologies, and communal identities. It could be approached as a kind of *scenography* that structures experience and interaction through open-ended spatial dramaturgies orchestrating material and immaterial elements as temporal, interconnected, and mutable phenomena.[1] Discrete from – yet implicated "within" – architecture, the design of interiors can be regarded as a discursive practice that falls anywhere on a trajectory "between" architecture's claim to enduring structures and the dynamic flux of theatrical performance. It exists between the everyday and spectacle; between the seemingly eternal and the ephemeral. No longer bound to a structural inner envelope, this interstitial realm – as both discourse and built environment – is sited both within and without architecture.

Perhaps more germane in our increasingly liquescent age, where virtual and visceral worlds enfold and entangle each other, is the term "spatial design," which expands the interior domain beyond architecture to include external sites as well as those of the imagination – gaming, cinematic, object, urban, landscape, and event design. My particular viewpoint is strongly inflected by performance; framed not only on conventional stages (performance spaces), but also as a means of understanding how we play out our daily existence through exhibitionary practices (spatial performances). In this case, it encompasses embodied modes of inhabitation within the complex dynamics (spatial performativity) of specific sites. As performance theorist Jon McKenzie claims – developing insights from sociologist Erving Goffman and philosopher Michel Foucault – we "perform or else!"[2] How do the varying magnitudes of our socially prescripted and aesthetically devised performances in everyday life affect and influence spatial performativity, its fabrication, and its impact?

Casting a performance lens on architecture requires us to adopt what another performance theorist, Richard Schechner, calls "a broad spectrum approach,"[3] recognizing that, while not everything *is* a conscious performance, everything can be studied *as* performance, including aesthetic, strategic, and operational acts occurring beyond theater. Such performances are inevitably tied to material sites, as well as less substantial realms of inhabitation. Emphasizing presentation, reception, and the experiential, a performance model also acknowledges that our highly mediated world – folding grand narratives, theatricality, and the everyday into each other – has become, what McKenzie asserts, "a designed environment in which an array of global performances unfold."[4] This means that the spatial designer is conventionally operating by kowtowing to politicians, institutions, lawmakers, and corporations – themselves designers of experience – and generally reinforcing, rather than challenging, prescribed performances. While space disciplines us to perform through architecture as a spatial discipline, it is also dependent on the co-creativity of its inhabitants, who simultaneously construct their environments through perception,

imagination, and sensory engagement via bodies, materials, technologies, and objects.

The spatial designer I advocate for not only operates through a spatial practice, but also acknowledges Henri Lefebvre's claim that space is socially produced and practiced, in turn producing social relationships. This involves a move towards reflexivity in design, rather than objectification. Such criticality offers what architectural theorist, Jane Rendell, proffers as "self-reflective modes of thought that seek to change the world, or at least the world in which the inequalities of market capitalism, as well as patriarchal and colonial (or postcolonial) interests, continue to dominate."[5] Rendell's advocacy for transformation, rather than description, requires an emphasis on spatial performativity allowing for design itself to dynamically enact something. Reciprocal action between the spatial and social informs how we move, encounter, and perform as citizens, family members, lovers, and creative individuals, as well as participants in multiple local and global communities. What follows is, therefore, a theory of event-space as a performative model, which recognizes that constructed space is itself an event and an integral driver of experience.

Not what built space *is*, but what it *does*

> Space occurs as the effect produced by the operations that orient it, situate it, temporalize it, and make it function in a polyvalent unity of conflictual programs or contractual proximities.
>
> — Michel de Certeau: *The Practice of Everyday Life*

> But one can say that there is no space, there are spaces. Space is not one, but space is plural, a plurality, a heterogeneity, a difference. That would also make us look at spacing differently. We would not be looking for one.
>
> — Daniel Libeskind: *The End of Space*

The two epigraphs above assert space as contentious, multiplicitous, and unpredictable, to which I would add, "performative." What is it for space to perform? In architectural discourse, the term "performance" has generally been associated with building science. As a technical and diagnostic tool for investigating the quantifiable workings of the constructed environment, building performance has focused on improving the operations and efficiencies of buildings and their physical impact on occupants who are rendered "users." Implicated in modernism's ongoing utopian project, its concerns with optimization have remained central in the engineering sciences, although twenty-first-century thinking has attempted to align pragmatic concerns with aesthetic considerations.[6] As David Leatherbarrow maintains in the opening chapter of *Performative Architecture: Beyond Instrumentality*,

> [t]he continued dedication to a technical interpretation of performance will lead to nothing more than an uncritical affirmation of old style functionalist thinking – a kind of thinking that is both reductive and inadequate because it recognizes only what it can predict.[7]

It is perhaps more productive to ask not what a building (as singular object) *is*, but what the fabricated environment (as a dynamic multiplicity) *does*.[8] By folding performance into the mix, built environments no longer need be perceived in relation to singular works of architecture, but as multimodal spatial action itself – as *spacing*!

How space *does*

> The question of architecture is in fact that of place, of taking place in space … an event.
>
> — Jacques Derrida, "*Point de Folie – Maintenant l'Architecture*"

As a compound term, event-space combines the disciplines of performance and architecture through the hyphen (-), a punctuation mark that simultaneously separates and joins while enacting a break or interruption. In *Of Grammatology* (1967), Jacques Derrida aligns this dynamic action in punctuation to "spacing" that "speaks the articulation of space and time, the becoming-space of time and the becoming-time of space."[9] For Derrida, punctuation enacts its own performative utterances designating not only the interval, but "a 'productive,' 'genetic,' 'practical' movement, an 'operation,' if you will."[10] The hyphen operates like a necessary membrane holding the fluid from the solid, the dynamic from the static, event from space.[11] The pairing of these two terms, however, must not be understood as existing in opposition. As an expressive interval, the simple dash adopts a performative gesture reflecting the creative and conflicting relationship between the fields of performance and architecture, forming an-other space for productive expression.

Almost two decades after establishing the spatiotemporal in language through punctuation, Derrida proposed the notion of architectural performativity, whereby architecture, by "taking place," becomes "the event of spacing."[12] This was through his critique of Bernard Tschumi's Parc de la Villette (1982–98) in Paris, in which the philosopher maintains that, through an "acting out" and "taking place," architecture puts something "into form."[13] In this case, the structure and placement of the park's red architectural follies are associated with madness (*la folie*), or more precisely madnesses (*les folies*) "acting out dissociation."[14] What began for Derrida as a critique of the "confinements within language" and the "solid, real buildings of social constructs" led to an evaluation on how discourse is structured by physical space: an active reading of its potentiality, navigating between the space of architecture and architectural space, between spatial language (utilizing architectural metaphors) and tangible construction.[15]

Spacing is an architectural act for both the designer formulating architecture and for the inhabitant experiencing it. This "provocation of an event" through spatial performativity specifically references the

"performative" outlined by language philosopher J.L. Austin in his seminal lecture, "How to Do Things With Words" (1975), where the dynamic nature of "speech acts" are expanded beyond language into action itself.[16] Separating the constative (descriptive) from the performative (active), Austin articulated how in speaking we can also be doing; that phrases such as "I do" (marry), or "I bet," or "I name" (a ship) actually enact what they state. Yet these speech acts require certain environments, actions, objects, and witnesses to accompany them; maybe no longer a white dress or even a wedding ring for marriage, but some sort of ritualized place, communal gathering, celebrant, and contract. Even a bet has an accompanying gesture and naming a ship requires the vessel itself. So these places and things, replete with cultural meaning, also perform rather than describe. As dramaturgical scenography – enacting multiple narratives – they are not mimetic (copies) but authentic elements inherent to the event, suggesting *how spaces and things do.*

If within the illocutionary act of speaking something is being done through the saying – which constitutes action itself, then within the illocutionary act of architectural construction something is being done through spacing as both the act of designing/building and embodied time-based inhabitation. Dramatic theorist Elin Diamond describes performativity within performance as "that risky and dangerous negotiation between a doing … and a thing done." By both enacting and describing, the performative provides us with "access to cultural meaning and critique."[17] As an aesthetic invention, "design" is both a doing (creative act) and a thing done (cultural artifact). Spacing, like design, represents both noun and verb, thing and action. Because action in space has a reciprocal relationship with space in action, our banal everyday environments can be perceived and utilized as continually fluctuating performances. This is further confounded by how the so-called "real world" is informed by virtual worlds emerging from various media and our own imaginations.

Unlike design, which focuses on designer and creative output, spacing articulates the acts of both designer and inhabitant as always in the making, whereby both are constantly reconstructing their perception of, and

engagement with, the built environment through time-based, embodied occupation. This relates to the choreographic notion of spacing as a means of registering and apprehending changing relationships between bodies in motion and the place they occupy. Within the singular spatial event of architecture, multiple events are enacted through spacing.[18] In *Architectures of Time*, Sanford Kwinter takes up Austin's performative, insisting that architecture confront its character as "an illocutionary event, or at the very least as an element inseparable from and in constant interface with the world of force, will, action and history."[19] He notes that this idea of the evental signaled a break with architectural history in which past epochs expressed their "will to form."[20] Through last century's spatiotemporal revolutions in science, arts, and communication, architecture is now perceived as an intimate system of forces giving shape and rhythm to everyday life via "micro-architectures" and "macro-architectures" derived from a range of practices that are both private and political.[21] Kwinter outlines how these modernist revolutions shifted the static spatialization of time to a more dynamic temporalization of space through an emphasis on movement, relativity, and duration.[22] Architecture, no longer recognized as a fixed, eternal entity, is rendered performative and realigns itself as active *becoming* rather than passive *being*. Approaching space by way of the transitory event – whether *historic* (epic incidents), *aesthetic* (theatrical displays) or *banal* (daily occurrences) – exposes an intricate system of active forces that undermine architecture's traditional role as a fixed, durable object designed to order space and those who inhabit it. As a multiplicitous event in motion, space (both actual and virtual) is an intricate and active player in our everyday lives.

Event-space and spatial events

> The question of architecture is in fact that of place, of taking place in space … an event.
>
> — Jacques Derrida, "*Point de Folie – Maintenant l'Architecture*"

Event-space is a term attributed to contemporary architect Bernard Tschumi, whose mantra has long been "there is no space without event."[23] His alliances with thinkers like Jacques Derrida, as well as his belief in the active nature of the built environment, have served to influence and shape early twenty-first-century architectural theory as "the discourse of events as much as the discourse of spaces," thereby challenging architecture to be more active.[24] This link between event and space questions architecture's traditional association with continuity, coherence, and autonomy by focusing on time, action, and movement.

Considering performance space as "evental" repositions built and imagined space as both embodied experience and evolving time-based event, where the constructed environment itself – whether permanent architecture or temporary installation – is no longer perceived as an immobile object but as a volatile spatial subject. Writing on theater in the early 1960s, Czech scholar Jiří Veltruský insisted action was not restricted to the human performer; "even a lifeless object may be perceived as the performing subject, and a live human being may be perceived as an element completely without will."[25] What if we were to extend this argument to built space itself, agreeing with architectural theorist Mark Wigley that "in an important sense, space precedes action," and adding " – as action"?[26]

As dynamic spatial action, event-space operates between the ordinary and the extraordinary, the subtle and the spectacular, the banal and the epic. Implicated in monumental, aesthetic, and daily events, places are shaped by significant historic moments, such as natural and human-made disasters as well as thought-shifting sociopolitical and philosophical revolutions. These dramatic spectacles demand and manipulate public attention, as well as the accumulation of intersecting quotidian performances happening all around us. While the aesthetically conceived event – theater, exhibition, installation, and dramatic interior – negotiates between real time and fictive time, existing site and fleeting interventions, as well as presentation and reception, a formulation of the quotidian event focuses on what Tschumi refers to as the "spectacle of everyday life."[27] These conditions are neither singular nor isolated, but manifold, fragmented,

overlapping, and mobile, implicating all as participants in the plethora of life's daily performances. As a performative phenomenon, our daily event-spaces call into question both the materiality of the built world and the immateriality of the event, revealing the lived world as a space of potentiality. These occupancies are described by Elizabeth Grosz as "saturated with spaces of projections, possibilities, and the new," allowing the unrealized and unthought to emerge.[28]

The diverse nature of the event – as a turning point, an aesthetic presentation, and a singular moment capable of being perceptually isolated amid the plurality and chaos of reality – establishes the intricate system of forces at play in the constructed environment; they operate as realms of reality and possibility, both actual and virtual.[29] The historic event-space occurs on the limits as a limit, through shock, containing within it elements of the dramatic event-space that takes place between the opposing terms of reality and illusion, presence and absence, here and there, now and then, performer and spectator.[30] This complex interplay is further complicated when leaving the confines of buildings built specifically to house cultural performances – theaters, galleries, museums, nightclubs, and even restaurants – whereby the dramatic event intersects more overtly with the multiplicity of the quotidian event-space. It often lacks the explicit architectural frame, collapsing theatrical and representational onto the banal and presentational of our lived reality. Event-space, therefore, needs to be considered through a range of modalities, scales, and temporalities: always as a dynamic organism that defies calculation. This is made particularly evident by spectacular moments when the slow performance of a seemingly eternal architectural object collides with the dynamic and destructive nature of the catastrophic event. Such conditions include decisive early twenty-first- century incidences such as the 9/11 terrorist attack on the United States (2001), the Indian Ocean tsunami (2004), and Japan's megaquake (2011). Architecture, like the banal quotidian event, is haunted by catastrophe as a moment of absolute failure and disruption from an exterior unrealized force, revealing civilization's impossible interior, dislocating representation, and presenting a moment where what seemed solid disintegrates.

Disciplinary maneuvers, post-catastrophe

It is important to recognize that architecture mutely incorporates power systems into the built environment – defining, regulating, and limiting our daily practices. This has become acutely evident since the event of 9/11, after which our freedom of movement and expression has been purposefully curtailed – locally and globally – in the very name of "freedom."[31] It is interesting to note that architecture was deliberately attacked in that decisive terrorist event for what it represented. Surrealist writer Georges Bataille maintained that architectural monuments were themselves violent phenomena that had to be eradicated because as static, dominant, and regulated forms they "impose silence on the multitudes" and "inspire socially acceptable behavior, and often a very real fear."[32] Foucault, who aligned the history of powers with the history of spaces, highlighted architecture as a disciplining mechanism.[33] His compatriot Lefebvre believed the "logic of space" conceals an authoritarian force through its "objectality," conditioning the competence and performance of the subject experiencing it as a resistant element "at times as implacably hard as a concrete wall."[34]

In his essay on "The Event," Deleuze counters objectality with the object-event, which he refers to as the *objectile*, "a very modern concept of a technological object."[35] No longer essentializing but active, the object is rendered a "theater of matter."[36] Rather than framing and structuring space, which cannot be apprehended as a singularity, it overflows its boundaries so as to annihilate the frame. Actualized in the built environment, the event transforms architecture through the element of time; from passive, homogeneous container/object into something more uneven, contracting and expanding. Space, saturated with spaces, becomes a continual unfolding, temporally defined and multiplied by an accelerated succession of actions.[37] Within the dilating layers of the architectural objectile, the interior can be experienced and understood as space-in-action.

Peter Eisenman refers to Deleuze's formulation in his 1992 article "Unfolding Events," where he claims that the new architectural object is an objectile because it involves "a temporal modulation that implies a continual

variation of matter."[38] However, such a temporalization of space and form is not so new; it was played out by the historical and second-wave avant-garde who focused on the dynamic event, rather than the autonomous object. Eisenman's architecture of unfolding events announces a tardy embrace of the evental by architectural discourse; it acknowledges the active force of built form and the difficult, as well as complex, relations that take place in a constantly changing context.[39] This displacement of the static conception of the built environment recognizes its complex temporality where the past and future are brought into a fluctuating present. Within the "play" of time, architecture is experienced through variable intensities of movement that occur within matter and by the body on the move. The Deleuzian ontology of becoming thereby challenges the invariable presence of modern architecture that has continued to rely on an ontology of stasis.

Spatial design as "Weak Architecture"

> Our petrified idea of the theatre is connected with our petrified idea of a culture without shadows, where, no matter which way it turns, our mind (esprit) encounters only emptiness, though space is full.
>
> — Antonin Artaud, *Theatre and Its Double*

In *Parables for the Virtual*, Brian Massumi writes, "What is pertinent about an event-space is not its boundedness, but what elements it lets pass, according to what criteria, at what rate, and to what effect."[40] Architectural theorist Rubió Ignasi Solà-Morales suggests we combat the brutal nature of disciplinary space with "weak architecture" that utilizes the fleeting, vestigial, and ephemeral to construct a new type of monumentality "bound up with the lingering resonance of poetry after it has been heard, with the recollection of architecture after it has been seen."[41] Solà-Morales refers to the tendency for architecture to foreclose on chance by attempting to create itineraries of control. In order for architecture to be transformed into a

dynamic and co-creative event, the aleatory and temporal, found in the theatrical event, must be admitted. "This is the strength of weakness; that strength which art and architecture can produce precisely when they adopt a posture that is not aggressive and dominating, but tangential and weak."[42] Spatial design can align itself to Solà-Morales's notion of weak architecture, which exerts its powers as both performative and resistant in defying attack through transience, permeability, and anti-monumentality. This could challenge architecture's conformist tendency in times of fear and crisis. A free-flowing exchange of, bodies, and ideas can be made present by spatiality that operates figuratively and concretely as an accessible, porous, and unpredictable realm.

Acknowledgement

This chapter develops and extends an earlier text: "Event-Space: Performance Space and Spatial Performativity" in *Performance Perspectives: a critical introduction* (Palgrave McMillan 2011: edited by Jonathan Pitches and Sita Popat), applying the event-space paradigm to interior design. It also draws from my book *Event-Space: Theatre Architecture and the Historical Avant-Garde* (Routledge Press, 2017).

Notes

1 Scenography, generally associated with the practice of theater design, concerns the visual, experiential, and spatial composition of an event, as well as how these integrated elements are presented (via the production) and received (by the audience), although the boundaries have become increasingly blurred through interactive and immersive theater practices. For more detailed discussions on Scenography as an expanding field, see Joslin McKinney and Philip Butterworth, *Introduction to Scenography* (New York: Cambridge University Press, 2009); Thea Brejzek, ed., *Expanding Scenography: On the Authoring of Space* (Prague: Arts & Theatre Institute, 2011), Dorita Hannah and Olav Harslof, *Performance Design* (Copenhagen: Museum Tusculanum Press, 2008), and Joslin McKinney and Scott Palmer, *Scenography Expanded: An Introduction to Contemporary Performance Design* (London: Bloomsbury Press, 2017).

Dramaturgy, as time-based dramatic composition in the performing arts, was adapted to sociology in order to observe sociocultural interaction as performances of everyday life. This chapter considers the dramatic and social in order to develop a notion of spatial dramaturgy.

2 Jon McKenzie, *Perform or Else: From Discipline to Performance* (London and New York: Routledge, 2001).

3 Richard Schechner, "Performance Studies: A Broad Spectrum Approach", in *The Performance Studies Reader*, ed. Henry Bial (New York and London: Routledge, 2004), pp. 7–9, 29.

4 Jon McKenzie, "Global Feeling", in *Performance Design*, ed. Dorita Hannah and Olav Harsløf (Copenhagen: Museum Tusculanum Press, 2008), p. 128.

5 Jane Rendell, "The Re-Assertion of Time Into Critical Spatial Practice", keynote address in *One Day Sculpture Symposium*, 2009, http://onedaysculpture.org.nz/_symposium/jane%20rendell%20formatted.pdf, 3. Reproduced as "Constellations (or the reassertion of time into critical spatial practice)", *One Day Sculpture*, ed. Claire Doherty and David Cross (Bielefeld, Germany: Kerber Verlag, 2009).

6 Omar Khan and Dorita Hannah, "Introduction", *Performance/Architecture, Journal of Architectural Education* 61, no. 4 (2008).

7 David Leatherbarrow, "Architecture's Unscripted Performance", in *Performative Architecture: Beyond Instrumentality*, ed. Branko Kolarevic and Ali Malkawi (New York: Spon Press, 2005): 7.

8 Ibid.

9 Jacques Derrida, *Of Grammatology*, trans. Gayatri Chakravorty Spivak (Baltimore, MD: John Hopkins University Press, 1997), p. 68.

10 Jacques Derrida, *Positions*, trans. Alan Bass (London: Continuum Press, 1997): 76.

11 This link to punctuation as a dynamic spacing was also discussed by Omar Khan and Dorita Hannah in relation to the term "performance/architecture": "Introduction" *Performance/Architecture*, ed. Omar Khan and Dorita Hannah, *Journal of Architectural Education*, 61, no. 4 (2008).

12 Jacques Derrida, "*Point de Folie – Maintenant l'Architecture*", reproduced in *Rethinking Architecture: A Reader in Cultural Theory*, ed. Leach (London and New York: Routledge, 1997), pp. 324–336. Originally published in Bernard Tschumi, *La Case Vide: La Villette* (London: Architectural Association, 1986), pp. 324–336, 320, 335. Jacques Derrida, who was introduced "into" architectural discourse by Bernard Tschumi, saw an application of his philosophy of deconstruction to architecture within the project of the Parc de la Villette. As the philosopher noted, this invitation to participate in the project threw him "into the space of architecture,

rather than architectural space," exposing him to a new discipline: Mark Wigley, "Jacques Derrida: Invitation to a Discussion", *Columbia Documents of Architecture and Theory* 1 (1992): 10–11, 7–27.

13 Jacques Derrida, "*Point de Folie – Maintenant l'Architecture*", pp. 333–334.

14 Ibid.

15 Jacques Derrida in Mark Wigley, "Jacques Derrida: Invitation to a Discussion", *Columbia Documents of Architecture and Theory* 1 (1992): 12.

16 J.L. Austin, *How to Do Things With Words* (Cambridge, MA: Harvard University Press, 1975), p. 8.

17 Elin Diamond, *Performance and Cultural Politics* (New York: Routledge), p. 5.

18 Gilles Deleuze posits this multiplicity in his essay on "The Event" in *The Fold: Leibniz and the Baroque*. Translated by Tom Conley (Minneapolis: University of Minnesota Press, 1993).

19 Sanford Kwinter, *Architectures of Time: Toward a Theory of the Event in Modernist Culture* (Cambridge, MA: MIT Press, 2001), p. 14.

20 Ibid., p.13.

21 Kwinter defines "micro-architectures" as the relations that saturate and compose the architectural object, whereas in "macro-architectures" the relations envelop and exceed the object. Ibid., p. 14.

22 This is discussed by Sanford Kwinter who describes "evental", with its alliance to time, as "concrete, plastic and active", in *Architectures of Time: Toward a Theory of the Event in Modernist Culture*, 69n.29. Peter Hallward's translation of *événementielle* is something akin to "of the event", or that which constitutes the event as new and irruptive of the old, discussed in his introduction to Alain Badiou, *Ethics: An Understanding of Evil* (London and New York: Verso, 2001), pp. xxxvi–lii.

23 Bernard Tschumi, *Architecture and Disjunction* (Cambridge, MA: MIT Press, 1996), p. 139. Although Bernard Tschumi's specific mention of this term is not prevalent in his texts, K. Michael Hays has cited him as its progenitor in *Architecture Theory Since 1968* (Cambridge, MA: MIT Press, 2000), p. 216. Hays states in an interview, "the term 'event-space' belongs to Tschumi." *Manifold* 3 (Houston, TX: Rice University Publication, Winter 2009), p. 82.

24 Ibid., p. 149.

25 Jiří Veltruský, "Man and Object in the Theatre", in *A Prague School Reader on Esthetics, Literary Structure and Style*, ed. P.L. Garvin (Washington, DC: Georgetown University Press, 1964), p. 88.

26 Wigley, "Jacques Derrida: Invitation to a Discussion", p. 23.

27 Bernard Tschumi, *Architecture and Disjunction* (Cambridge, MA: MIT Press, 1996), p. 22.

28 Elizabeth Grosz, *Architecture From the Outside: Essays on Virtual and Real Spaces* (Cambridge, MA: MIT Press, 2001), p. 78.

29 Elizabeth Grosz defines the "virtual" as resisting "an already preformed version of the real" in favor of that which "promises something different to the actual that it produces." Ibid., p. 12.

30 Gay McAuley, *Space in Performance: Making Meaning in the Theater* (Ann Arbor, MI: University of Michigan Press, 1999), p. 255.

31 9/11 sanctioned the infiltration of our personal spaces, both domestic and virtual, as revealed by U.S. IT professional, Edward Snowden, in his 2013 disclosures of the NSA's global set of controls.

32 Georges Bataille, "Architecture," in *Rethinking Architecture*, ed. Neil Leach (London: Routledge Press, 1997), p. 21.

33 Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings: 1972–1977*, ed. Colin Gordon (New York: Pantheon Books), p. 149.

34 Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford: Blackwell, 1991), p. 57.

35 Gilles Deleuze, *The Fold: Leibniz and the Baroque*, trans. Tom Conley (Minneapolis, MN: University of Minnesota Press, 1993), p. 88. Deleuze is also referring to Bernard Cache's notion of the *objectile*, which transforms the architectural *subjectile*, forming volume through surface, to the *objectile* as a spatial variability within that volume. See Bernard Cache, *Earth Moves: The Furnishing of Territories* (Cambridge, MA: MIT Press, 1995).

36 Deleuze, *The Fold: Leibniz and the Baroque*, p. 37.

37 Michel de Certeau, *The Practice of Everyday Life* (Los Angeles, CA: University of California Press, 1988), p. 118.

38 Peter Eisenman, "Unfolding Events", in *Incorporations*, eds. Jonathan Crary and Sanford Kwinter (New York: Zone, 1992), pp. 424, 422–427. Eisenman articulates a paradigm shift from the "placebound" architecture of the mechanical age to an "evental" architecture that takes account of the mediated world; "a new type of environment, comprised of light, sound, movement, an event-structure in which architecture does not simply stand against media, but is consumed by it" (Ibid.). Although discourse surrounding the *objectile* by Deleuze, Cache, and Peter Eisenman refers to effects of the digital age, Marco de Carpo points out that digital thought preceded digital technology (*Architecture in the Age of Printing*, p. 123). This chapter therefore maintains that the objectile, as active agent, is not dependent on digital media.

39 James Williams, "Deleuze's Ontology and Creativity: Becoming in Architecture", in *Pli* 9, Parallel Processes (2000): 200–219, 207.

40 Brian Massumi, *Parables for the Virtual; Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2002), p. 79.

41 Rubió Ignasi Solà-Morales, *Differences: Topographies of Contemporary Architecture*, trans. Graham Thompson, ed. Sarah Whiting (Cambridge, MA: MIT Press, 1997), p. 71.

42 Ibid.

Chapter 36

Documenting interiority/inhabiting duration

Marian Macken

In an alley in the Sydney suburb of Surry Hills stands a plum-colored wall with a black door. Two large sculpted matchsticks – one unlit, one burnt almost to the bottom – are attached to the wall next to the entrance door. Little signage alludes to the interior: this former t-shirt factory was once the studio and home of Australian artist Brett Whiteley. Since his death, it has shifted from a working studio to a studio reconstruction and is preserved as an adjunct exhibition space under the auspices of the Art Gallery of New South Wales (AGNSW). Whiteley's work, based on the human figure, with an abstract, lyrical expressionism, is held in collections of the National Gallery of Australia in Canberra, the Tate Gallery in London, and the Museum of Modern Art in New York. Whiteley twice won the Archibald, Wynne, and Sulman prizes (the most prestigious art prizes in Australia) and is now recognized as one of Australia's most prominent artists. The late Robert Hughes, longstanding art critic of *Time* magazine, writes, "His intellectual appetite is matched by no other Australian painter I've met."[1] Born in 1939, Whiteley left Australia in the 1960s on a traveling scholarship.

Over the course of his career, he occupied studios in Italy, London, New York, Tangier, and Fiji. He returned to Sydney in 1969, buying this property on Raper Street in Surry Hills in 1985 and occupying it as a studio and living space until his death in 1992. The space was the site for an artistic community to come together during his occupation, due to Whiteley's social vivacity. Three years after Whiteley's death, the Raper Street studio space was opened to the public and continues to present exhibitions of Whiteley's work, public programs, and special events. The studio-museum is an example of a room preserved, and many such spaces exist as legacies of artists. The Brett Whiteley Studio is one of the few studio-museums in Australia dedicated to the work of a single artist, and it exists due to a good representation of work kept together by the artist's family, their initiative of the proposal, and government support.

The studio-museum entry leads into a ground floor exhibition space. Upstairs, Whiteley's working space is retained as though the painter had just recently walked out of the room; unfinished paintings and art equipment are left as if the act of painting will continue. The floor is paint-spattered, photos and newspaper clippings are tacked to the walls among hand-written quotes ("oysters think," "actionless activity") above shelves of books and *objets d'art*, while songs of Leonard Cohen play. Comparing photographs of the space from the 1980s with those more recently taken allows for "then and now" comparisons; however, due to the preservation of the studio, it is merely Whiteley's presence in the photograph that reveals the time frame in which they were taken (Figures 36.1 and 36.2).

Figure 36.1 Brett Whiteley, Raper Street studio (1988–89)

Image credit: Andrew Fisher

Figure 36.2 Brett Whiteley Studio (2007)

Image credit: Graham McCarter

During the artist's life, the studio's output was the chief interest and importance: paintings, sculptures, and drawings documented Whiteley's creative process, and the studio occupied a liminal space between the act of making and the made. The studio is referred to through these artworks. With the death of an artist, and this output ceasing, the physicality of the space is of interest, as the site of former artistic events. For the visitor, the opportunity and experience of being within the space gives an immediacy to the artist's work. Rather than gazing at paintings, the studio-museum visitor may take an active role and walk into the space, be immersed and enclosed within the same space that the artist once worked in. For Edmund Capon, the former director of the AGNSW, the Whiteley Studio still feels "curiously occupied" by the spirit of the artist through its atmosphere.[2] According to curator Barry Pierce, "exuberance, inspiration, and melancholy" are present in the space, a contemporary spirit that extends beyond the individual to being a time capsule of a generation of Australian artists.[3]

A visitor to the studio-museum approaches with an expectation of authenticity, of being within the "real" space of the studio, an expectation which looms over and compresses the temporal distance between its former use as a studio and the present day of the visit. However, the visitor is entering a space that is no longer used or inhabited, but which, in fact, resists inhabitation (except by the "spirit" of the former artist). The space is observable but not occupiable. The visitor retains the role of the "viewer," at once existing within the space but also a member of the audience. Depending on the curatorial philosophy, the passage of time is halted and change is excluded. These studio-museums suspend time and understanding of the temporality of place. It is not the artist's studio that is being visited, but rather, the residue of a former inhabitation. The space becomes defined as a physical container of absence; the studio-museum becomes a vessel of a former creative dynamism. With the understanding that events and

experiences leave residual traces as proof of their occurrence, the studio-museum retains and preserves former artistic events: it becomes a spatial document, or spatial archive, that serves as evidence of a course of events.[4] In this way, the room is a trace left by the past. As a spatial document, the studio-museum is more specifically a document of interiority. This spatial document occupies the same site and structure as the original and is imprinted with traces of its own original space, but it is no longer the original.

Replication

The studio-museum, as a replicated original space, has analogies with a full-scale, *post factum* model of the space. It operates similarly to the reconstruction of Mies van der Rohe's German Pavilion, designed for the 1928/29 International Exposition in Barcelona (referred to as the Barcelona Pavilion), nearly sixty years after the original was dismantled. Naming the reconstructed Barcelona Pavilion – or studio-museum – a full-scale, *post factum* model makes explicit the experience for the visitor: one is walking within a replica.[5] This aspect of replication is more pronounced in studios that have moved location such as those of Constantin Brancusi, whose studio was relocated from its original location in the 15th arrondissement to the Centre Pompidou in Paris, and Francis Bacon, whose studio was relocated from London to Dublin. Here, a team led by conservator Mary McGrath and that included archaeologists made drawings of the studio, mapping out the spaces and locations of the objects, even including the dust.[6] In such relocations, it is more apparent that one is visiting a fabrication. These studio-museums operate as "metonymic signs of the experience," somewhat like representation.[7]

In the case of the Whiteley Studio, this replication is less apparent. Kester Rattenbury has written of the potential for the replica to usurp the original, using two-dimensional images as examples:

> Sometimes a photo or a drawing – done either before or after construction – frames a specific architectural interpretation so successfully that it becomes the quintessential image: the "real" or "authentic" version of it, of which the occupied, adapted … or inaccessible building seems only a partly valid version. Sometimes, as the only record of a demolished building, it almost replaces the architecture in the idea of being "real."[8]

The three-dimensionality of the preserved studio-museum – its ability to be walked within – leads to the possibility of "conflat[ing] simulacra with the thing imitated."[9] For this not to occur, the original and the replica can be separated either by an interval of time, which offers a caesura, or by the different form that a reinterpretation provides. In the case of the Brett Whiteley Studio, the interval between the original and the reconstruction that stands to separate the two and overcome the common factor of the two occupying the same site is small. The temporal distance is insufficient to allow the reconstruction to sit *next to* the original, as another version. Although aware that the artist has departed the space, the visitor follows their imaginary passage from room to room; this co-habitation is the stronger sensation than that of a reconstruction. Here, three-dimensionality equates to authenticity. However, the lack of inhabitation of the space, its presence as a *formerly* creative space, calls this into question. According to Walter Benjamin, this is the distance that separates an original from its replica and defines it as an inauthentic space:

> In even the most perfect reproduction, one thing is lacking: the here and now of the work of art – its unique existence in a particular place. It is this unique existence – and nothing else – that bears the mark of the history to which the work has been subject… . The here and now of the original underlies the concept of its authenticity.[10]

Usually the permanence of the full-scale assumes a reality, but reading the studio-museum-as-replica as a full-scale model questions this. Instead, the studio-museum investigates spatial artificiality. These spatial documents question the inherent authenticity that the full-scale space demands.

The work of German artist Thomas Demand offers a different form of documentation, one in which the original and the replica are separated by the different form that his reinterpretation manifests, yet also explores these issues of the original, the replica, and authenticity while documenting interiority. Demand makes full-scale paper models from two-dimensional images (found in the media) of architectural spaces, exteriors, and natural environments. It is not the building in the image that is made, but the space of event; for example, the hallway leading to Jeffrey Dahmer's Milwaukee apartment in *Corridor* (1995) or the Florida recounting of ballots in the 2000 U.S. presidential election in *Poll* (2001). He then photographs the model and destroys it; the photographs are triple removed from the scenes or objects they depict.[11]

The documented space of Demand's work can also be seen as locations of former dynamic creativity, since creative output merges with the documentation of the space itself; they, too, are a form of spatial document. His work *Archive* (1995) reconstructs the personal inventory of filmmaker and Nazi propagandist Leni Riefenstahl (Figure 36.3). In this image, thin, grey-brown, unlabeled boxes (assumed to hold reels of film) stand stacked on the floor and on white shelving; a ladder diagonally cuts the middle of the photograph. *Room (Zimmer)* (1996) uses an unauthorized photograph of the New York City hotel room where L. Ron Hubbard, the founder of the Church of Scientology, lived during the early 1970s. In this image, there is a constructed messiness: an unmade bed with open boxes and other debris of inhabitation in the foreground, and a writing desk laid with papers behind.

Demand's models are never things unto themselves; they are a means to an end, painstakingly crafted and subsequently discarded. Their three-dimensionality sits within the flatness of two photographs, one the catalyst, and the other the residue of their making. Through this process,

what might be considered thin constructions are imbued with depth. The smoothness of the photographic surface "is countered by the implicit thickness of subject matter."[12] According to Michael Fried, the photographs are "saturated" with Demand's intentions: "the viewer is called upon to do nothing more than register the 'madeness.'"[13] However, these new images, although completely made, are devoid of evidentiary traces and marks of human use which we associate with the original scene.[14] These spaces are chosen by Demand to be documented due to their former inhabitation (events happened here), yet now they are representations of uninhabited spaces, similar to studio-museums. Demand's work also critiques the assumption of authenticity – in this case, that of photography. His work is not evidence or proof, but are traces of a process. Rather than merely documenting a space (Leni Riefenstahl's archive), his work documents former creatively dynamic spaces; the space and process of making. His photographs are not evidentiary of one room but of a creative space and its activity, and due to their different form they do not "make a claim over the real."[15]

Figure 36.3 Thomas Demand, *Archive* (1995)

Image credit: © Thomas Demand, VG Bild-Kunst, Bonn; Courtesy Sprueth Magers

Duration

Although these two examples of spatial documents (studio-museums and Demand's photographs) display quite different media and dimensionality, they share an intention to document interiority. Three-dimensional, formerly creatively dynamic space is documented to preserve the trace of past artistic events. As documents, the question arises as to temporality:

> In what way is the document sufficient in representing those histories where there is no evidence remaining – no longer a thread of continuity, a plenum of meaning of monumental history – but rather a fracture, a discontinuity, the mark of which is

> obliteration, erasure, and amnesia? Furthermore, we may ask: What temporal zone does the document occupy, what is its relation to the past, to the present and even to the future? Is what is materially present, visible, or legible, adequate to an event that has passed out of present time?[16]

When viewing Demand's photographs, reflection upon the past is expected; it is the site of what once happened, what has been, and it is the manifestation of an event of making. The space is doubly preserved as a moment in time: when the events of occupation and the making of the construction occurred. The photographs are preserved moments, the subjects of which are no longer under the influence of decay or palimpsest. It is well understood that viewing photographs brings the past, that which has been captured, to the present gaze of the viewer, as Geoffrey Batchen summarizes:

> Photographs, so it is said, always capture a moment in the past, a moment that we subsequently view in the present. To look at a photograph is therefore to experience a temporal movement back and forth between past and present; it is to witness the passing of time in general.[17]

Temporally, studio-museums operate similarly, distending time. They too are preserved as a moment in time – when Whiteley last put down his paintbrush – similar to a photograph's capturing of an instant. Eduardo Cadava writes of the photograph as an "abbreviation that telescopes history into a moment."[18] The studio-museum is a snapshot of inhabitation, no longer undergoing change, yet continuously present. A visitor experiences being within a room, within the three-dimensionality of the spatial document. This room has a scale and atmosphere and is influenced by the changing light of the day and the seasons. Hence, the visitor experiences two presents: the ongoing present of the spatial document (the moment of the artist's inhabitation preserved) and the current present (the moment experienced by the visitor). We are able to be within "a passed past that

nevertheless remains preserved in its vestiges."[19] Edmund Husserl's term of a "thickened present" refers to this spatial, durational quality, in which past events are retained as traces in the present. Stephen Kern writes, "the present is a continuous unrolling field of consciousness, thickened with retentions and protentions."[20]

Mary Ann Doane suggests that modernism was obsessed with "the contradictory desire of archiving presence."[21] She notes, however, that "what is archivable loses its presence, becomes immediately the past."[22] This reading of the document dismisses the connection that is maintained between the past and the present: a former "present" becomes an ongoing present. What is severed, however, is the connection to the future. According to Arkie Whiteley, the artist's daughter, the studio is "constantly evolving. It's not just a mausoleum. We're keeping it alive."[23] But there will be no future productivity, no future paintings with Whiteley's signature produced within the space. With the original inhabitant absent, the power of territory and ownership has gone: the space no longer exudes a presence.

These spatial documents of interiority operate within multiple temporalities and demonstrate temporal complexity beyond Doane's assumed "past." Charles Merewether writes:

> The document therefore carries forward not evidence of the past so much as that something has passed, and it shows us something that even the past may not have recognized till now, too late. There is a sense of a deferred temporality, a strange suspension of time that within the present is an uncovering not so much of revelation of an originating event of cause as that of recognition.[24]

These spatial documents question the certainty of the sequence of past – present – future; they bring the events of the past to be "brought forward and contained within the present," disrupting continuity.[25]

The Whiteley Studio, as a spatial document of interiority, joins the archive of the artist. Formerly, the artworks were the referents of the studio's presence. With the studio assuming the role of recording and preserving the

space of creativity – emphasizing (a former event's) pastness while preserving an ever-ongoing present – its documentary qualities shift its perception. In 1975, Whiteley wrote: "We should have a museum … it would be ten feet wide and a mile long, like a railway tunnel, and you could walk down someone's life chronologically."[26] The studio-museum, as a trace left by the past, becomes a spatial archive similar to Whiteley's museum. In the case of Demand's photographs, already part of the artist's archive, their reading brings a temporal complexity to the archive. The space of the archive, therefore, assumes a temporal narrative. Rather than temporal succession of past – present – future within the archive, there exists temporal simultaneity, and these documents, as traces, become "intratemporal, that which is 'within-time'"; the future has a presence within the archive.[27]

Notes

1 Art Gallery of NSW, *Brett Whiteley Studio* (Sydney: Art Gallery of New South Wales, 2007), p. 70.

2 Ibid., p. 175.

3 Ibid., p. 30.

4 Charles Merewether, "Introduction: Art and the Archive", in *The Archive*, ed. Charles Merewether (London: Whitechapel; Cambridge, MA: MIT Press, 2006), p. 10.

5 For an extended reading of the Barcelona Pavilion as full-scale model, see Marian Macken, "Solidifying the Shadow: *Post Factum* Documentation and the Design Process", *Architectural Theory Review* 14, no. 3 (2009): 333–343.

6 Dublin City Gallery, The Hugh Lane, "History of Studio Relocation", www.hughlane.ie/history-of-studio-relocation (accessed 29 April 2015).

7 Charles Merewether, "A Language to Come: Japanese Photography After the Event", in *The Archive*, ed. Charles Merewether (London: Whitechapel; Cambridge, MA: MIT Press, 2006), p. 127.

8 Kester Rattenbury, ed., *This Is Not Architecture* (London: Routledge, 2002), p. 57.

9 'While it has become a commonplace of the early twenty-first century to conflate simulacra with the thing imitated, the two remained relatively distinct between the wars. It was the difference between the two, not their similarity, which prompted Walter Benjamin to write such seminal

essays as "The Mimetic Function," and "The Work of Art in the Age of Mechanical Reproduction."' George Dodds, *Building Desire: On the Barcelona Pavilion* (London: Routledge, 2005), p. 5.

10 Walter Benjamin, "The Work of Art in the Age of Reproducibility", in *Walter Benjamin: Selected Writings, Volume 4, 1938–1940*, ed. Howard Eiland and Michael W. Jennings (Cambridge, MA: Harvard University Press, 2003, 1939), p. 253.

11 Thomas Demand, *Thomas Demand/Roxana Morcoci* (New York: Museum of Modern Art, 2005), p. 10.

12 Jasmine Benyamin, "Analog Dreams", in *306090: A Journal of Emergent Architecture and Design, 11: Models*, ed. Emily Abruzzo, Eric Ellingsen, and Jonathan D. Solomon (Princeton, NJ: School of Architecture, Princeton University, 2007), p. 90.

13 Michael Fried, *Why Photography Matters as Art as Never Before* (New Haven, CT: Yale University Press, 2008), p. 271.

14 Ibid.

15 Merewether, "A Language to Come", p. 135.

16 Merewether, "Introduction: Art and the Archive", p. 12.

17 Geoffrey Batchen, "Life and Death", in *Time*, ed. Amelia Groom (London: Whitechapel Gallery; Cambridge, MA: The MIT Press, 2013), p. 49.

18 Eduardo Cadava, *Words of Light: Theses on the Photography of History* (New York: Princeton University Press, 1997), p. 63.

19 Paul Ricoeur, *Time and Narrative, Volume 3* (Chicago: University of Chicago Press, 1985/1990), p. 120.

20 Stephen Kern, *The Culture of Time and Space, 1880–1918* (Cambridge, MA: Harvard University Press, 1983), p. 84.

21 Mary Ann Doane, cited in Sven Spieker, *The Big Archive: Art From Bureaucracy* (Cambridge, MA: The MIT Press, 2008), p. 25.

22 Ibid., p. 26.

23 *Brett Whiteley Studio* (Sydney: Art Gallery of New South Wales, 2007), p. 170.

24 Merewether, "A Language to Come", p. 129.

25 Ibid., p. 127.

26 Art Gallery of NSW, *Brett Whiteley Studio* (Sydney: Art Gallery of New South Wales, 2007), p. 170.

27 Ricœur, *Time and Narrative, Volume 3*, p. 122.

Chapter 37

Topology and interiority

Folding space inside

Johan Voordouw

Interiority, in relation to topology, is understood as an internalized centralization of space, a condition with an inherent spatial intimacy. Interiority is increasingly eroded in contemporary architectural practice; this enclosure has been methodically worn away.[1] The formal boundary of the interior, the interface of the inside to the outside, has in the past century theoretically and formally evolved from a defined threshold to a porous, ambiguous gradient. This chapter will focus on a specific aspect of this erosion, namely topological surfaces, and explore the characteristics of this gradient and speculate on strategies to re-establish interiority through topological geometries.

In a larger, meta context, current discourse of contemporary milieu is described in terms of seamless connectivity. This connectivity blurs the boundaries that have defined the social and cultural environment. Boundaries in recent discourse are not calcified or contained but pushed, transgressed, penetrated, and erased. Spatially, this continual assault on the

boundary is having a subversive effect on the interiority of architecture. The interior is erased by its continual link to the outside. This architectural erasure has taken root since modernism. It is not only the pervasive transparency of the curtain wall that "lets the outside in." Transparency was an aesthetic and an ethic, opening up to a new world.[2]

Before the digital turn, the "visible boundaries, such as walls or enclosures in general, give rise for their part to an appearance of separation between spaces where in fact what exists is an ambiguous continuity," as described in Henri Lefebvre's seminal book *The Production of Space*.[3] As we become more connected, and as practice becomes more digital, this continuity will be more ambiguous. Teyssot states that thresholds rarely constitute a barrier and that these thresholds are increasingly porous.[4] While Teyssot posits this condition in relation to public space, it equally applies to the interior of contemporary spaces. The increased openness of the interior (open space) runs concurrent to the increased porosity of the interior to the outside. Furthermore, the hybridity and ambiguity of programmatic thresholds have undermined the ability to define and enclose space; yet we reside inside.

Today's inside/outside relationship is a stark opposition to modernity, when the facade was a wall of defense to the menacing city. Daily activities hidden behind the facade now play out on an open surface. The face of the building melting to become the field, the classic facade once hiding, and the topological field offers no such coverage. The outside is not only something to let in, there is no inside to be outside of. In her observation about Deleuze, Elizabeth Groz states that it is not that the inside is the opposite of the outside as much as the outside represents the real.[5] Architectural space remains in a virtual state of "becoming," while the city and environment already pulsate with life. What are the implications of interiority if we "live" in a continual exterior? How do we define interiority as a primacy of place when space is continually linked physically, virtually, and digitally to the complex network beyond? If interiority is a centralization of space, and if this centralization facilitates and encloses social activities, how does architecture deal with topological structures that

are both internally and externally porous and social structures that are in a continual state of virtual connection?

Topology

The term "topology" was first published in a paper entitled "Vorstudien zur Topologie" by Johann Benedict Listing in 1847. The Mobius strip was defined eighteen years later, in 1865.[6] Topology and architecture have a number of inherent contradictions. Mathematically, topology deals with scaleless deformation undermining a critical dimension of architecture; topologies are geometrical relationships devoid of scale and measure. Through deformation, different shapes are geometrically the same, which undermines the critical importance of form; topology studies the surface of geometry – it has no space. Topology remains critical to current computational architecture. To understand how topology has retained relevancy, it is critical to understand how the definition has morphed through its short but intensive use in architecture. By no means the first mention of topology in relation to architecture, Reyner Banham used the terms in his essay "The New Brutalism" to describe the Smithson's Sheffield project, stating that the "connectivity" (topology) of the circulation, inside/outside, and penetration have always been important to architecture but had historically been subservient to platonic geometry (building form).[7] Banham described the banality of topology when he stated that both a brick and a billiard ball could become the same topological shape through simple deformation. In Banham's article, topology is separate from form, subservient in the architectural hierarchy of circulation, playing an important but secondary role to architectural form. In the coming decades, these two considerations would merge. Topology entered contemporary lexicon through Deleuze's book *Le pli: Leibniz et le Baroque (The Fold: Leibniz and the Baroque).* Bernard Cache, Peter Eisenman, and Greg Lynn brought Deleuze's book to a broader architectural audience in the mid-1990s in subsequent articles for *Architectural Design* magazine, most notably in Lynn's March/April 1993 issue entitled "Folding in Architecture" and Cache's "Earth Moves."[8]

Deleuze's *The Fold* focused on Leibniz, his philosophical work, and his contributions to differential calculus. However it was Euler's mathematical dilemma, "Seven Bridges of Konigsberg," that was considered one of the earliest examples of topological deduction. Twenty years separate Leibniz's death and the Konigsberg solution. Therefore, while topology has roots in the Baroque, its clarification was articulated later.

The fold as a formal practice in architecture later became synonymous with the Baroque. (This might stem from Leibniz's life's work and from Deleuze's use of Wolfflin's seminal book *Renaissance und Barock*.) While Deleuze cites the Baroque's separation of facade and the autonomy of the interior, this was only a facet of the larger characteristics that define Wolfflin's (ecclesiastical) Baroque architecture. While architectural topology could exhibit the somber massiveness, movement, painterly effects, and totalizing unity of Wolfflin's Baroque topology, as Banham's anecdote illustrates, is not inherently Baroque in form.[9] In relation to architecture, this shifts the development of topological surfaces to a different historical lineage. Topology as an architectural form and practice is a continuation of postmodernism, not a "Baroque" development of modernism.

Contemporary interest in topology stems from either the precision of its mathematical background, the ambiguity of its philosophical appropriation, its fluid formal characteristics, or a hybrid combination of all three. Eisenman's original position defined "folding" as a process – not a product – that induced a notion of movement and continual variation.[10] Within a decade of Deleuze's translated text, the definition of topology had expanded to appropriate its continual smoothness as a reaction to changing external events. It was understood as a flexible form, malleable to specific context and environments, not as representations but as undulating (folding) landscapes.[11] Here, topology gained the programmatic ambiguity and hybrid activity that would define its present articulation in practice. Lynn's blobs were an early expression of this programmatic growth and fusion, undermining the predominance of form, a last reaction against modernism.[12] More recently, topology was expressed as the undulating deep surface, as Lars Spuybroek defined, that could blister, filo, or sponge, its architectural

articulation a continuation of Frei Otto's critical work on minimal surfaces and tensile structures.[13]

The architectural practicalities of topology are connected to the development of suitable modeling software and computation. Topology in architecture is an inherent result of the "digital revolution" that has taken shape since the mid-1980s. Mario Carpo notes the unique peculiarity of the digital revolution and its postmodern staging point, "It [is] a revolution with no identifiable history and no predetermined destination."[14] This might explain its broad use and ambiguity. While Carpo states that topology is the "embodiment of the new computer age," the connection of computers to topological geometry was built "*on a truism but generalized into a fallacy*"; while the computer facilitates complex form its does not presuppose curvilinear forms.[15] When Greg Lynn introduced "folding in architecture," the reference point was a broad index of interests that swept topology, morphology, and the like to herald a new "digital turn"; beyond the formal qualities of curvilinear form topology is the study of surface.[16] As surface, which might become continuous to define form, its spatial study is elusive. At its architectural core is how we define the surface that encloses space to become the inside. Whether this interiority is the corporeal surface of the body (skin) or the material surface of an architectural skin, the boundary needs both depth and enclosure.[17]

Through computation, there is an increased gap between form (which is logically, parametrically, defined) and space, which is now a secondary result of form. Modernism was transparent but enclosed. Contemporary topological surfaces are opaque but their thresholds are porous. The opaqueness defines the surface but does little to define the interior; the continuity of the surface prevents the (programmatic) definition of the interior and the porosity prevents its (spatial) enclosure.

With specific topological surfaces, such as the Mobius strip, the interior and exterior oscillate as the surface folds over and loops around. This is compelling programmatically but has inherent spatial issues. If the surface is given thickness, it gains a form but not a "space." Space is now a result of form, not a means to form. This is consequential because to

understand contemporary interiority we must understand digital practice on its own terms and in its own time. The topological imperative seems to foster the requirement that "A revolution that has not produced a new space has not realized its full potential; indeed it has failed in that it has not changed life itself but has merely changed ideological superstructures, institutions, or political apparatuses."[18] As a "revolution" with no identifiable beginning and no inherent direction, it affords us the opportunity to consider and focus on the present. Current topological considerations, even when vertically stacked, inhabit the surface as ground. It invokes the rolling hills of the landscape; it is a metaphorical expression of the environmental concerns of the outside world as continuity of inner life. In this respect, interiority of topological structures is critical to the current architectural milieu because it exemplifies the twenty-first century's most pressing concerns. While it is poor in illustrating the interconnected network of (social) communication, as a field it astutely expresses environmental condition without resorting to environmentalism. However, this inhabitation must be internalized. For architecture to better express the issues of the outside, it must find a counterbalance within itself. For topology to express space, its surface must enclose.

Erasure of interiority

Walter Benjamin sat at a threshold. The interiority of nineteenth-century Paris was very specific to its time and place. His time was both the end of the Beaux Arts facade and the rise of the steel frame and its growing transparency. It might be purposeful to distinguish between these two spaces, the heavy wall and the light frame, and how in contemporary practice these two elements of architectural enclosure have evolved. The "mask," as Giedion described the classical facade, was the visible expression of classical composition while the architectural "truth" lay hidden in the steel structure behind the stone.[19]

Topology undermines both of these defined conditions. The porosity of the topological boundary erodes the solidity of the facade. With

the facade removed, the interiority that once contained the modern apartment is opened up like the back of a dollhouse, exposed to the outside. The separation of the facade from the interior is untenable in topological surfaces where the walls, floor, and ceiling are varying deformations of the same continuous surface. Furthermore, if we invert Benjamin's glass-covered, steel-framed arcade from interiority to exteriority, it more aptly forms the lineage towards transparency and nomadism that, as stated by Deleuze and Guattari, define the spaces of the later twentieth century.[20] The "truth" of structure is once more hidden, embedded in the continuous surface that facilitates inhabitation. With topology, the arcade as wandering path expands from line to network to field, from infrastructure to surface. The interior is therefore affronted from two directions: one is the erosion of the facade from the outside, the second is the increased transparency and openness within space itself. "Open space" is increasingly synonymous with the outside.

Space is not found, it is structured, and from this structure interiority is constructed. To consider the ground as the plane of inhabitation ignores the volume needed to physicalize human presence. Structured space argues for a tectonic response that undermines the hegemony of surface. Tim Ingold writes, "the hegemony of the straight line is a phenomenon of modernity, not of culture in general." He continues, "Since the straight line can be specified by numerical values, it becomes an index of quantitative rather than qualitative knowledge."[21] This might be true of computational surfaces as well. To quantify mathematically is to know materially but not to understand culturally or spatially. The interior was so easily erased as its discourse was qualitative and its boundaries increasingly vague. As Lefebvre writes, "all 'subjects' are situated in a space in which they must either recognize themselves or lose themselves, a space which they may both enjoy and modify."[22] The definition of interiority need not revert to the static compartmentalization of rooms for space to be constructed, nor does the infinitely folded surface that ideally defines topology need to fragment to staidly define the floor, walls, and ceiling. Topology must simply fold in such a manner that deforms surface to form

space. Interiority as a defined inside to a surrounding outside can retain the porosity but rescind the ambiguity that has previously undermined its articulation. In its present construction, for all the dynamism of topological surfaces, it remains as staid and static as the Dom-ino system of Le Corbusier. While it facilitates passive meandering, it stifles modification. While it is variable, it remains immobile. It remains an open question how one might both enjoy and modify, but for that condition to exist the surface must spatialize, the interior must be demarcated, and the exterior must be defined as something "out there."

Centralizing space

It might be a contradiction that architecture is concerned with space when for such long periods of its practice architecture was unconcerned with the interior. Laugier's primitive hut was open to the elements, its roof and columns a vague definition of an interior. There is a difference between the architectural history of Giedion and the philosophy of Deleuze when they speak of space and interior, respectively. Giedion speaks of the first space conception as volumes in space, outside looking at the object. He cites the lack of interior in ancient structures (Egypt, Sumeria, and Greece) because the space contained no windows to connect to the outside.[23] To Deleuze, the interior (monad) is completely enclosing inside the object, with no connection to the outside. Deleuze notes, "The monad is the autonomy of the inside, an inside without an outside."[24] Deleuze further separates the enclosing walls from the interior when he continues:

> It [monad] has as its correlative the independence of the facade, an outside without an inside. Now the facade can have doors and windows – it is riddled with holes – although there may be no voids, a hole being only the site of a more rarefied matter. The doors and windows of that matter open or even close only from the outside and onto the outside.[25]

This hole is topological. There is no void because the topology is a surface. The hole in the surface has no void because there is no volume. Giedion's first conception has no space, Deleuze's monad is space but no architecture, his facade has surface but no space. In both conditions, architecture struggles to materialize.

There are many other lateral anecdotes that describe the erosion of interiority. Tim Ingold's "zones of entanglement" are particularly interesting because they describe a "meshwork of interwoven lines – there are not insides or outsides, only openings and ways through."[26] This tangentially describes Greg Lynn's "felt," which was a seminal metaphor in early computation.[27],[28] This meshwork describes as much Spuybroek's "Gothic logic" of lines weaving and bifurcating to form surfaces as it does the lines of an interconnected system that define a facet of today's contemporary practice. Continually, there is negation of the center (Euclidean) to the expansiveness of the landscape (quasi-Cartesian). "The emphasis is on continuity of the landscape, a smoothness, with a notable reciprocal influence of the environment on building."[29] Tangential continuation through this expanding field might arrive at Gregotti's advice to start an architectural work at the geographical scale. Relayed in Bernard Cache's *Earth Moves*, Gregotti states, "beyond the built frame there is the site, but beyond that still, there is the outside. Geography is not the surroundings of the building, but rather the impossibility of its closure."[30] This linkage might be incidental, but it describes the decentralized vantage point from which architecture is viewed. As Cache intimates,

> The ground plane rarefies the surface of the earth in order to allow human activities to take shape. As these surfaces become increasingly smooth and continuous, their grip is reduced to a minimum. The stairway becomes a ramp and the ground falls away.[31]

Topological interiors

There are a number of examples that describe topological interiors. Kiesler's Endless House (1924–50), lifted off the ground, was a separation of space from ground. Conversely, Jacques Gillet's Sculpture House (1962) was cave-like and contained. Interiority is not an argument for pure separation, recreating Giedion's first space conception to replace Deleuze's neo-Baroque. Furthermore, it is not an argument for a calcified interior, the staid rooms of classicism hidden behind the massive facade. It merely argues for a defined interior to partner and counter the pervasive exteriority that defines much of the current discourse.

In mathematical terms, points on a topological surface are not equal. Therefore, in architectural terms, a hierarchy lies latently embedded in the folds. The question remains whether topology is used to form a porous surface, folding out to merge with the exterior, or conversely begins to wrap and form a new interior. The outside will always be present, but interiority in architecture must be nurtured and preferred if space is to be constructed and experienced. If the center of topologies is critical, the definition of the edge is equally important. Topological surfaces currently have two edge conditions: one is blended into the landscape; the other is a violent cut of the surface, extruded like the side of a cliff revealing its folds. Both conditions deal poorly with the boundary of the outside. In the former, the outside merges in; in the latter the transparent edifice puts all interiority on show. Here Lars Spuybroek (NOX) offers a direction forward. The 1993–97 H_2Oexpo offers an enclosed topology. The pavilion constructs a surface for active engagement. It combines ambiguity to facilitate new disparate modes of experience with defining a tectonic and space on the inside. The Teshima Art Center, by Ryue Nishizawa and structural engineer Mutsuro Sasaki, offers a more recent example (Figure 37.1). The pure "nothingness" of space that encapsulates the public inside a covered space beautifully frames the outside. This interiority is not for protection. It is simply a definition and difference from the outside in all its poetic subtlety. Additional works by SANAA at the Rolex Learning Center at the Ecole Polytechnique Fédérale de Lausanne explore the undulating plane as habitable surface, and Toyo Ito's

Taichung Metropolitan Opera House is a topological surface that defines both vertical as well as horizontal space over a series of connected floors.

Figure 37.1 Teshima Art Centre (2010), Architect Ryue Nishizawa with structural engineer Mutsuro Sasaki. A hovering surface that defines an enclosure.

Image credit: Iwan Baan

Interiority is not so much a defense against the outside as a counterpoint to recognize its boundaries and clarify its variability. "Threshold is a zone formed by precise tectonics, an area of knowledge and even of knowability."[32] Knowing comes from definition; the gradient that is continually blurred is also the zone that prevents knowing. Tectonics speak to the material condition and the finite limitations that distinguish between constructed and unconstructed. The threshold is an "interval between things," not a continuity seemingly without end.[33] This articulation could suggest the wandering path that traverses the floor surface of SANAA's Rolex Learning Center, the ambiguity of the undulating surface periodically

clarifying in the line of a walkway, momentarily materialized to denote scale, direction, and purpose (Figure 37.2).

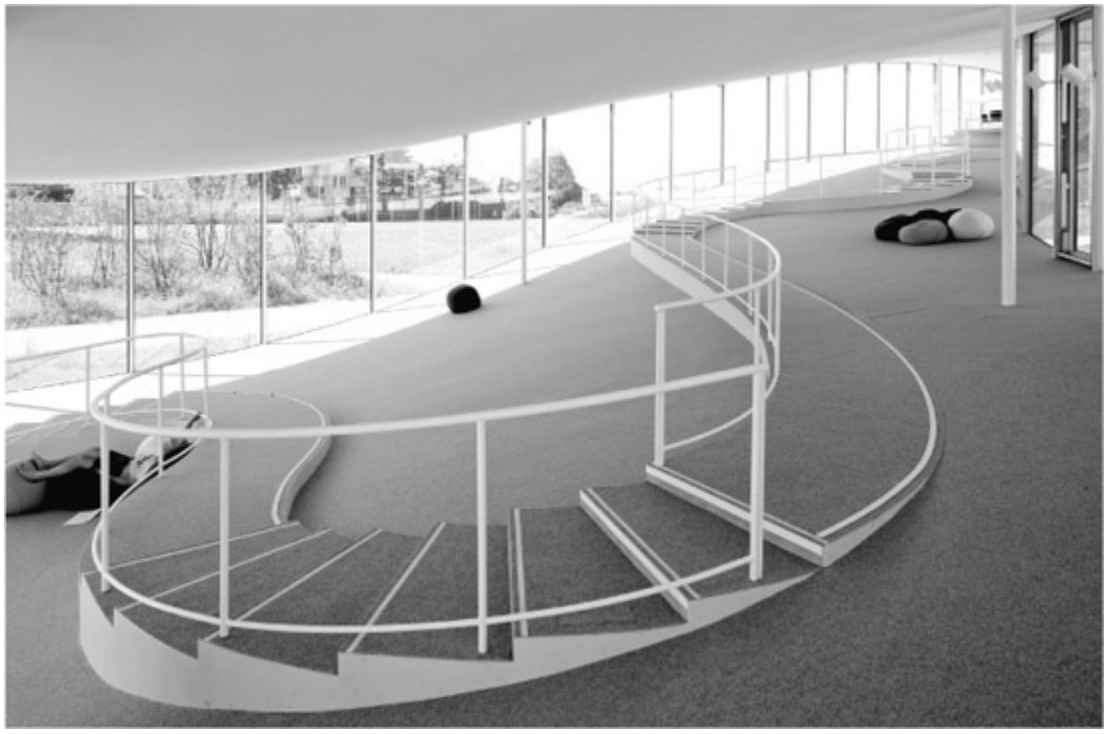


Figure 37.2 Rolex Learning Centre at the Ecole Polytechnique Fédérale de Lausanne (2010), SANAA. A path cuts across the topological floor to define a place for movement.

Image credit: Iwan Baan

If the interior is the defining characteristic of architecture, then it might be this clarity upon which to shape and wrap practice. This new *étui* is not so much the hermetic shell of modernity as the materialized network of the digital age. This new topological interiority would not only ask new questions of embodiment, but also would use the digital systems that are pervasively augmenting and fabricating architectural practice to privilege the "real" not only outside, but in any place that the body chooses to wander and reside.

Notes

1 Interface is used in conventional terms "where two things meet," although the term was selected to play with the idea of the computer interface. An early interest of digital architecture was the use of media, internet, and projection in eroding the boundary of interior and exterior space. This chapter circumvents the media/transarchitecture lens of early computation to focus predominantly on geometry.

2 Maria Rita Perbellini and Christian Pongratz, *Natural Born CAADesigners: Young American Architects* (Basel: Birkhauser, 2000), p. 9.

3 Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Malden, MA: Blackwell Publishing, 1991), p. 87.

4 Georges Teyssot, *A Topology of Everyday Constellations* (Cambridge, MA: MIT Press, 2013), p. 266.

5 Elizabeth Groz, *Architecture From the Outside: Essays on Virtual and Real Space* (Cambridge, MA: MIT Press, 2001), p. 66.

6 Basic topology information from conversations and e-mail correspondence with Kyle Harvey of Carleton University, School of Mathematics and Statistics (February 2015) and the history of topology from e-mail correspondence with Tom Archibald of Simon Fraser University (May 2015).

7 Reyner Banham, "The New Brutalism", *The Architectural Review* 118, 708 (December 1955): 355–361.

8 *The Alphabet and the Algorithm* (Cambridge, MA: MIT Press, 2011), pp. 85–86.

9 Heinrich Wolfflin, *Renaissance and Baroque*, trans. Kathrin Simon (London: Fontana Collins, 1964), as represented by the four chapters and content in part one.

10 Mario Carpo, *The Alphabet and the Algorithm* (Cambridge, MA: MIT Press, 2011), pp. 87–89.

11 Maria Rita and Pongratz, *Natural Born CAADesigners*, p. 91.

12 Ibid., p. 24, 25.

13 Lars Spuybroek, *NOX: Machining Architecture* (London: Thames & Hudson, 2004), p. 12.

14 Carpo, *The Alphabet and the Algorithm*, p. 110.

15 Ibid., p. 85.

16 Ibid., p. 89.

17 Groz, *Architecture From the Outside*, p. 32.

18 Lefebvre, *The Production of Space*, p. 54.

19 Teyssot, *A Topology of Everyday Constellations*, p. 266.

20 Ibid., pp. 99–101.

21 Tim Ingold, *Lines: A Brief History* (London: Routledge, 2007), p. 155.

22 Lefebvre, *The Production of Space*, p. 35.

23 Sigfried Giedion, *The Eternal Present: The Beginnings of Architecture* (London: Oxford University Press, 1964), p. 521.

24 Gilles Deleuze, *The Fold: Leibniz and the Baroque*, trans. Tom Conley (London: Continuum, 2006), pp. 31–32.

25 Ibid.

26 Ingold, *Lines*, p. 103.

27 Greg Lynn, "Architectural Curvilinearity: The Folded, the Pliant and the Supple", *Architectural Design (Folding in Architecture)* 63, 3/4 (March/April 1993): 15–24.

28 Spuybroek, *NOX: Machining Architecture*, p. 163.

29 Alicia Imperiale, *New Flatness: Surface Tension in Architecture* (Basel: Birkhauser, 2000), p. 31.

30 Bernard Cache, *Earth Moves* (Cambridge, MA: MIT Press, 1995), pp. 68–70.

31 Ibid., pp. 25–26.

32 Jacques Leenhardt, "Le passage comme forme d'expérience: Benjamin face à Aragon", in *Walter Benjamin et Paris*, ed. Heinz Wismann (Paris: Cerf, 1986), p. 169.

33 Ibid., p. 169.

Chapter 38

Architectural purgatory

The car, the garage, and the house

Anthony Morey and Volkan Alkanoglu

> Neither Design nor Function,
> Neither Circulation nor Program,
> Neither Space nor Place,
> Neither Object nor Inhabitant,
> Neither Interior nor Exterior …

Architects have revered the automobile for its abilities, its function, and its form. Paradoxically, the automobile spawned one of the largest threats to architecture: the garage. Devoid of function and implied form, and born from immediate response, the garage forged the next fifty years of the field. In thinking of the city and home in the twentieth century, inevitably transportation, highways, and roads come to mind. Today's constant stream of movement finds humanity constantly moving through the interiors of the world, only viewing glimpses of the exterior environment. Inside our homes, automobiles, and offices, the world has become a constant interior.

Architects have used the appearance and formation of the automobile as generators of architectural relevance and a canvas of exploration; exemplified by Le Corbusier and his depictions of the modern city, his famous 1927 photo in front of Casa Weissen layered with an automobile and a female model, or Villa Savoy's lower level articulation that allowed for the full turn radius of a car, empowering the car to both enter the interior shell of the home and dominate the initial design of the home. Frank Lloyd Wright often designed both for and around automobiles. His masterpiece, the Guggenheim Museum in New York, owes its most distinctive interior elements – the spiral of its rotunda and its continuous surface circulation – to his affinity for the automobile and the space they occupied. Architecture has had a long and fascinated affliction with the automobile. Yet, the automobile is not a child of architecture at its inception; in fact, it could be said it was made to bypass architecture.

The car plus architecture equals the garage

The early intersections of architecture and automobile slowly brought the car from the street into the home. The home, reluctant to fully accept this foreign intruder, fought back. In the end, a third, alien formation was produced, one belonging to neighbor parents fully, and instead, we received the outlier of interior space: the garage (Figure 38.1).

The large numbers of cars, and the myriad trips in those cars to and from home, work, places of recreation, grocery stores, and so forth made traffic a universal subject of discussion throughout the architectural discipline. This allowed for cities to become the backdrops of daily life, only blurs between red lights and parking garages. Focus shifted to the destination, highway signs, and turns. Once differentiated, cities became similar, only identified by their highway exit numbers. Garages grew over parks; people became cars and buses in photos. Over time the car became as much of an inhabitant of architecture as the human. They produce immense density, with the tendency of driving intense loneliness. We sit, watching lives that will never meet ours pass us by, separated only by the technology

that is made to connect us. We follow the red lights to our destination, looking at the white lights of those that have experienced our adventures return to where we come from.

The automobile has produced highways, parking, and modified architectural endeavors on every level. The car was an urban phenomenon whose sudden appearance caused havoc with downtown streets, traffic, and storage. The spatial problem became so acute that there was little time to understand the repercussions of such an injection of form into the social realm. Thus, function became form. Early garages doubled, as did repair shops and filling stations. The automobile soon needed as much architecture as the residents they transported. This new inhabitant played a civic role in appearance, their designers cladding the new structures with glazed terracotta facades and operable windows. As stated by Rafael Moneo in reaction to Le Corbusier's work:

> Architecture must also assume its role in assimilating and integrating the automobile, find a place for it in its agenda. I don't think anyone would be surprised if I were to say that architecture so far made very little effort to try and coexist with the automobile … contemporary architecture "mistreats" the automobile, perhaps with the acquiescence of society … recalling the importance that Le Corbusier attached to the automobile seems to me to be a very relevant and useful reflection … Le Corbusier thought that the car should always be present in his Architecture.[1]

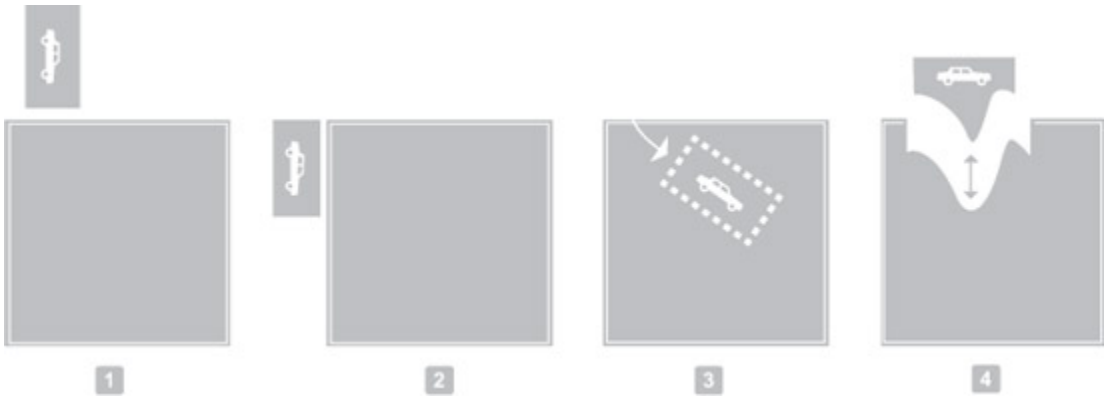


Figure 38.1 Diagram demonstrating the assimilation and absorption of the automobile and its effects on the dwelling over time

Image credit: Volkan Alkanoglu Design (2015)

While much of the work that exists today is a reaction to the original implementation of the automobile into society, society – and directly architecture – has done very little to advance itself in the name of integration or assimilation.

The automobile dominated architecture. It restricted it, forced it to comply, and reinvented the method and parti of architecture. Architecture had historically been focused on the interaction and inhabitation of the human figure. It has long been focused with this realm of society, yet architecture has found itself controlled, manipulated, and desperately chasing the goals of the automobile industry. The home being labeled as a machine for living brought upon the formation of the car as a machine for the home. The explosion into society at a rate of one every forty-five seconds created an overflow of machines. An overflow of design allowed little time for response from a field that reveres thought over implementation. Architecture's fantastic response was the garage – the architectural equivalent of purgatory; a space that has largely become one of disarray, storage, and exile of history. As part of the typical single-family house, the garage has always been an eyesore or an architectural misfit to any comprehensive layout and parti; stuck on the side, hidden behind brick veneers, disguised as an extension of the housing mass. The automobile,

proud marvel of the industrial age, the sign of modernism, technology, and design found itself located next to tools, Christmas lights, and washing machines. Architecture had no response, no assimilation, and no integration – only space. It was an object, one that was used as needed and forgotten when not.

Even today, a garage is known as a part of a home, and is associated as a parasitic object attached against the home's will. Viewed as an unconventional space within the conventional urban fabric, the garage has found itself as home to countless modern day revolts. This purgatory of a space has allowed for unconventional ideas to explode; creations such as Amazon, HP, Apple, Nirvana (and in general all young bands), all formed and fostered initially as outliers and outcast in society, were all founded within this invisible armature of suburbia. Here is where we store the pinnacle of the Industrial Revolution, in a space bleeding revolution, bleeding reinvention, and we are surprised when reinvention turned its eyes on its most unwarranted occupant. There must be an avenue to regain the volume that has traditionally been allocated to an uninhabited space within the home.

Car as form, as object, and as space evokes many of the same tools, thoughts, and conversations found within architecture. Performance, corner issues, transparency, and privacy are all found on the scale of the home and on the scale of the automobile. Space, for architects and designers, exists in realms with names such as "inside" and "outside." There is a clear connection between the two, one that seems to grant leeway in the way that either is connected or understood. This question of what an automobile is allows for us to stop and wonder what we are designing. In reality, what does the term "automobile" imply? Does it imply the function of the object? The shape? If anything, it seems to imply an idea, a memory, one that is tied to something more than form and function. In considering early memories of an automobile, it is likely that it existed in the form of a toy, an object you held in your hand; one that drove over any object within reach, survived falls from the tallest bookshelf, and resided in the home. It was also the magical animal your parents took to work in the morning; it was the way to

see the world. It was not merely an internal combustible engine framed by a steel chassis with air conditioning. There is always more to an object that the object itself. Here we discover where architecture can find some creative freedoms and interpretations. We must consider that the term itself has run its course.

Architecture may have reached a point where the automobile is ready to be absorbed, for the term to be played with, contaminated, and tested. A moment came in the last century where the terms “technology” and “machine” delineated from the dominance of the other. They both have formed an arena of architectural discourse, one where the aesthetics of function have seemed to overwhelm the discussion. Here, it may not be the aesthetics in question, but the social impact of the term. Society has found itself welcoming technology within the setting of the home, while uneasy of the term machine, which has come to imply dirt, noise, and pollution. Here is where the car has found its Achilles heel. While pursuing the Darwinian desire for survival, the automobile has turned to technology to survive.

Technology has a long history of distorting architectural conventions. It has destroyed the corner by allowing curves to smooth it into oblivion; it has disfigured poché (the walls, columns, and other solids of a building or the like, as indicated on an architectural plan, usually in black) into a graphic, no longer a negative space of conversation. Technology has allowed us to embrace our imaginations, our impossibilities, and to construct them. Our thoughts and ideas are closer to those of childlike dreams and superhero worlds than those of modern day architectural thinking. Architecture has found time to play, to take a step back and allow for some enjoyment, some fruitful embracing of the sprints it has been forced to make to keep up with the machine. Architecture has found itself a child again, pursuing routes of discovery with little regard to outcome or reality. It is valuable to consider how, in this new century, technology seems to be capable not only of collapsing distance but even annihilating it, such that our notions of space and of the built environment are being reinvented to align with the urges and desires of our dreams. Dreams have become the sketches and hopes of reality.

What is a car with no driver? What is a car with no destination? What is a car that no longer needs a road to travel? What is a car if it drives itself? What is a house if not a stationary car? Modern automobiles resemble building programs rather than dirty machines. Inventing refreshed views on the car-architecture assimilation, the car has found a way to understand the home, the dwelling, and thus, architecture. The car is no longer a machine, but technology. The driver, once a staple of a car, is no longer needed, allowing for self-guided movement, thus fostering communication and interaction such as that found in the program of a home. The car is no longer forced to thrive on gasoline and fuel but is quickly becoming a thriving sustainable appliance allowed in the home. Recent technology has allowed the car to receive the largest transformations of form, usage, and program since its inception. This change, these variables and the destabilized nature of the car, has left a larger ability for architecture to regain the space once stolen; it has given architecture a playground of possibilities.

There is a sudden blurring of programmable space and connectivity being allocated to the automobile. If connectivity is no longer based on proximity, is a car needed for relevance or transport? If you can talk, eat, and sleep in a space that is in constant movement, what is the benefit of community, neighborhoods, or towns? There seems to be more at play than a car that can plug into a wall or a battery that can recharge in eight hours or less. The idea is that the cars of the future are playrooms or multifunctional rooms that are part-house-part-car and capable of things that only children can imagine. The car becomes a space of programmable possible impossibilities; it becomes the object that can survive falls from the tallest bookshelf.

The automobile has become a space of social interaction; it is no longer the lonesome experience of a machine but has become a medium of connection for technology. As in Greg Lynn's RV prototype house, it uses the terminology closely associated with automobiles and allows for the program of a house to infiltrate and inform the form. Projects like Auto Residence of 2012 by Volkan Alkanoglu Design shows how the simple choice to reject the garage as an object and implement the car directly into the

interior dwelling can create a forum of conversation between the two. This allows both to resonate off each other, parts of the dwelling become the car, and the car becomes part of the interior organization of the dwelling. By reducing the form and utility into a space, much like the cabin of a car, the dwelling brings together intelligent systems, comfort, and freedom of motion while calling attention to the jumps in technology's ability to realign architecture's tendencies.

Various forms of media have understood the usage of the car and garage, and might give us a glimpse of the trajectories in architecture. *The Jetsons*, a cartoon, showed the ability of a car that folds into a briefcase, completely erasing the need for auxiliary storage. The film *Oblivion* shows a motorcycle that folds into a briefcase and can thus be carried to and from a destination, the machine completely concealed within technology. While a childhood cartoon and a Hollywood film may seem to be farfetched and dispatched mediums from modern day architecture and design, we find inventions like The Folding CITYCAR from MIT, for example, that become a key part of the interior space, and allow for space-saving solutions and conservation of social tendencies and dwelling comfort.

While the threads of film, cartoon, and children's toys may seem distant from conversations of dwelling, garage, architecture, and discipline, that could not be further from the truth. It reinforces the idea that form rarely follows function when function is constantly updated and progressing. Form and function do not exist in a world where neither is understood nor cared for, yet they allow for trajectories of architecture to see a glimpse into the future. This allows us to entertain the questions: Does a house still look like a house, or does a car still look like a car? Should they? What is a house, and what is a car? A youth's TV show and Hollywood would seem to say it could be anything, and today's technology would seem to agree.

It is important to question the current programmatic elements of our homes. Space, for architects, designers, and a majority of the world exist in realms with names such as "inside" and "outside." Yet one group of today's society has the ability to see that everything can exist in other

variations; they know there can be a middle, or no space at all, that not all must be tied to an extreme of classification or regulation. They can see the world in a cardboard box or an underwater universe underneath a blanket: children. To a child, space is not confined by architectural history. There is no hard line such as interior or exterior. Their playrooms allow for new associations and the erasing of old ones. They exist in a relentless state of infinite possibilities. They are unaware of any scheme, and because of this, they are capable of creating innocent mistakes and fruitful discoveries. To them, a garage is not storage, but an endless cave of possibilities.

As adults who remember when the world was limitless, we find ourselves in a constant striving notion of recovering the wonder and delight in the early experiences with space we once took for granted as children. It is valuable to consider how, in this new century, technology seems to be capable not only of collapsing distance but even annihilating it, such that our notions of space and of the built environment are being reinvented to align with the urges and desires of our childhood dreams. Perhaps, above all, play is a simple joy that is a cherished part of childhood. A child's playroom is a place where anything can happen. Architecture can be an avenue of play for adults, one that combines the power of childhood naivetés with the means of processing experience and of defining the relationships, purpose, and order of architectural need and desire. It allows for consequences-free production with uninhibited ability. It allows us to take a car and a home and place them within each other. It allows us to wonder what happens and revel in the outcome.

Forms, spaces, and shapes are built with little regard to finite purpose. It is possible that with the reinvention of the automobile, its social and architectural implications may find their way out of the garage and into the home, right back into the playrooms of childhood awe. We must understand how and why we have the programmatic and social structures in our homes and find ways to reinvent the whole, not the part. We must regain the space and form that the car had held. Simple tools such as the usage of terminology, forms, or methods are a direct and immediate form of assimilating the utility of these two worlds of architecture and automobiles.

Scale, form, and color are all of the interaction needed, nothing defined by the definitions we attribute to them through repeated usage. It may be time to allow some naïve realignment.

Various forms of manufacturing, from aerospace, virtual, and automobile industries, are now openly transferable and infiltrating each other. Today's technology is last century's automobile. It has overtaken architecture, displaced it, shaken it, and allowed it to settle into new territories; it has allowed architecture to play. Modern understanding of space and form allows for cars to become the naïve toys of childhood, allowed to be anything and go anywhere. It is allowing the car to be absorbed into the house and into the city while bringing the city, dwelling, and social interaction into the car. The car has become the garage, and the garage has become the dwelling; the car is no longer an object but a program. This absorption of the automobile into the external shell of architecture has slowly allowed the garage to exist, and now the garage has been absorbed into the interior shell of the home, opening new and unexplored architectural challenges.

We once showcased the automobile on the exterior as a fashion of exemplifying the modern connection to architecture. The garage transformed the automobile into a symbiotic attachment to the home, only relevant through proximity. Technology has now allowed the car to travel into the interior without architectural separation. It is now shown on the interior; the framing of the interior architecture becomes the site for a new interaction between car and home. The exterior format of Casa Weissen is replaced by the Auto Residence of Volkan Alkanoglu Design (Figure 38.2).

A car can now be treated as an inhabitant in the interior realm of the home. The garage has found itself empty, unneeded. Aligned with the newly fashioned social norms of the home, and with transportation changing faster than ever, the time is ideal for new values and social implementations of architectural devices. This allows for architecture to regain the spatial opportunity it handed to the garage out of necessity to accommodate an uninvited and undesirable dweller. New developments in the automobile and manufacturing industry are pushing technologies

toward electric and connected automobiles, allowing us to blur the once stringent norms of what one calls a home. These new norms grant the home's interior to bleed to the exterior, and the once isolated exterior to the infinite interior,[4] allowing us to invite the once reviled dweller to become an inhabitant, a resident, and begin to understand its desires and needs. We now have the unique opportunity to rethink the troubled relationship between cars, the garage, and the interior, and thus, architecture itself.

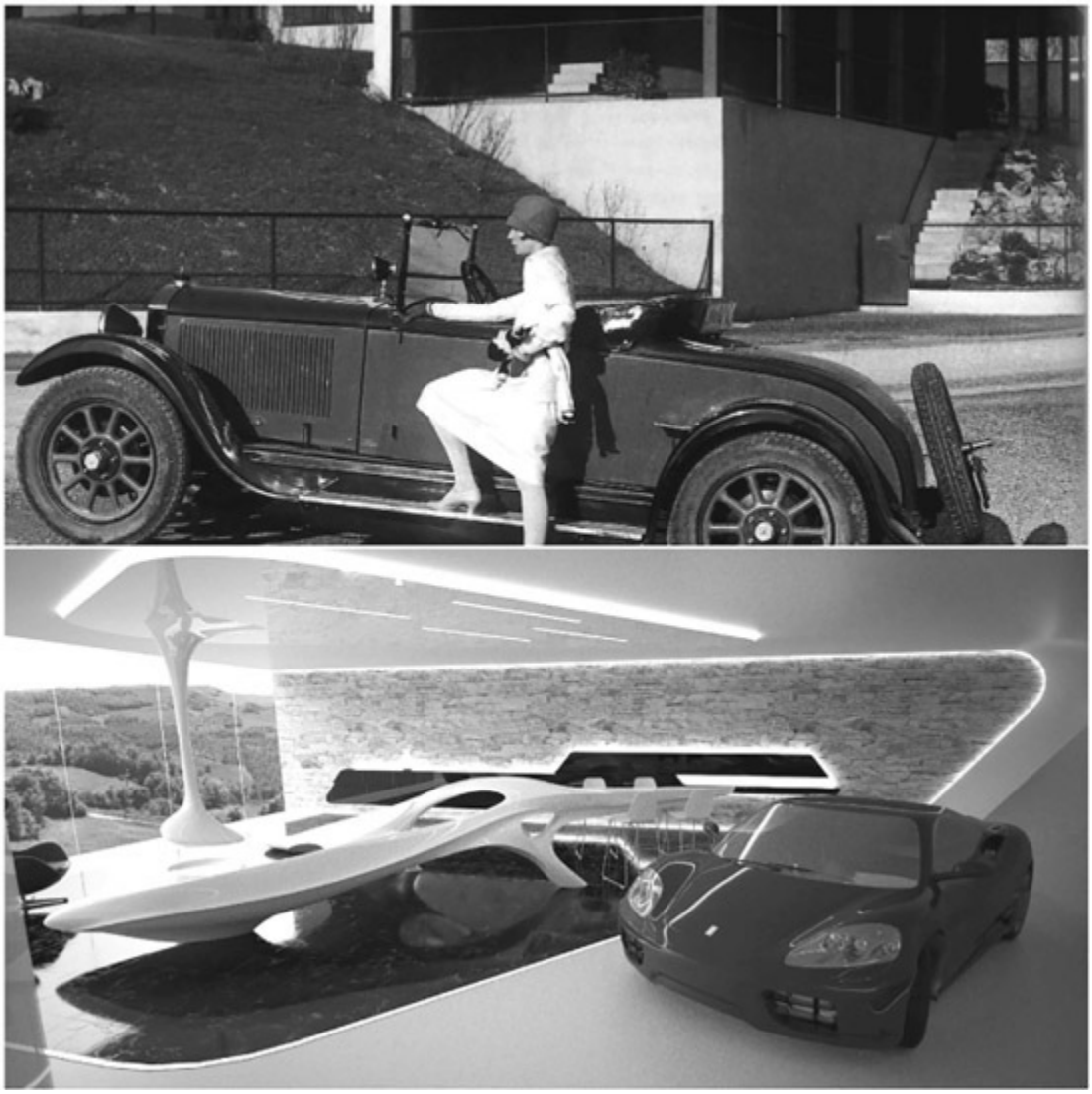


Figure 38.2 Top, Casa Weissen, Le Corbusier 1927;[2] Bottom, Park Residence, Volkan Alkanoglu 2012[3]

Notes

1 Various authors, *Automoción y Urbanismo: Europa – La ciudad ideal* (Madrid: Fundación Barreiros, 2004), pp. 19–20.

2 Willy Boesiger and Oscar Storonov, *Le Corbusier, Complete Works* (Princeton, NJ: Princeton Architectural Press, 1994), p. 18.

3 Volkan Alkanoglu, "Auto Residence – Volkan Alkanoglu | DESIGN", Auto Residence, Volkan Alkanoglu | DESIGN, 2012. www.alkanoglu.com (accessed 8 June 2015).

4 "Yowp: The Jetsons Are Not Top Cat", Yowp: The Jetsons Are Not Top Cat (accessed 12 June 2015).

Chapter 39

Spacing and forming

A performative account of a design studio

Jan Smitheram

The chapter presents a course that encouraged a critical observation of design communication. The only pedagogical constraint was simple – one assignment needed to address an exchange between digital and analogue communication. From these parameters, a first-year course was developed in the undergraduate program at Victoria University of Wellington. Part of this development was to approach the course through blended teaching in different modes with technology integrated into a singular course.[1] Although the studio used digital tutorials and teaching platforms, the meaning of blended teaching is extended here beyond a discussion of technology to embrace and merge different aspects of architecture, interior design, and urban design into one course without hierarchy. Pragmatic concerns shaped the course. With an average of 280 students per year, it had to be taught in three streams with each stream being taught for two 2-hour classes per week. This meant that studio was taught in small groups (in a country where, historically, studio means one-to-one tutorials). The course

was also foundational for interior design, architecture, and landscape students. To deal with these pragmatic issues, the course needed to have a clear sense of direction. To provide this overall sense of direction, occupation was looked at as performative.

The course's assessments consisted of two assignments: the first was called *spacing*. This term is outlined in the next section alongside the term *forming*, which was the title for the second assignment. These two assignments were segmented into weekly tasks. Five weekly tasks were required for each assignment, with the final week of both assignments providing support for students to consider their layout and bring all of their work together. The lectures were structured to support each week's task. Readings for the course were framed as providing insight into the course – but learning was clearly framed as occurring through drawing and making.

Part one: theory

In this section, I expand on how occupation was framed in the studio. In particular, how the body, space, and forming come into play through a performative focus.[2] There are many storylines on how the body occupies space; often the story is one of forgetting and omitting the body. Robert Imrie's research into how architects conceive the body revealed that, for the most part, architects in practice still do not consider the body when they design. Alternatively, if they do consider the body, it is as an ideal body or their own body that is used as a measure projected onto the built.[3] Imrie argues that current educational programs reify a normative body rather than having a lived body as an explicit concern. For the first project, the spatial history of the body was acknowledged in the lectures, but the focus was on a "lived body." By focusing on the latter, the intent was that students would consider occupation empathetically, with an understanding of the body inscribed, for example, by memory, touch, sight, and smell – to see the possibility of where space prompts the body or is part of an embodied experience.

The next term critical to this studio was spacing. Spacing, for Crouch, is admittedly an awkward term.[4] While it is awkward, in my own research it had been useful as a way to describe the occupation of space as performative rather than understanding the body and space as separate entities from the outset. My research looks at spacing by bringing the terms *performance* and *performativity* together as a composite. This draws on Judith Butler's notion of performativity, where I consider spacing in terms of performativity, citationality, and materialization.[5] Butler's description of gender brought beneficial insights into how we might also understand spacing between the body and the built as a repetition of norms; and through this process of repetition spacing is materialized. But equally, I considered the body and space as a performance. Performance is, of course, associated with the temporal, the transformative, and the affective. Understanding spacing through this composite of performance and

performativity enabled me to analyze, for example, images of space and bodies in advertising and how these are both regulated and transformative. In the studio, rather than using spacing as an analytical term, it was used to prompt students to consider occupation when they designed.

While the term spacing has a limited history in the spatial disciplines, forming has an established history. Forming, or the creation of form, can be understood in a more negative way, such as imposing form on matter, creating boundaries, and imposing boundaries around spatial disciplines themselves. Forming, in this respect, could be understood in contrast to spacing, and following Eisenman further, forming is complicit with architecture's historical relationship with the body.[6] So, while spacing may draw embodiment and occupation into spatial discussions, forming draws us back toward the act of objectification which, for Eisenman, embodies the classical value system around architecture dividing space between private and public and the creation of functional space. In this project the use of the word forming was strategic in order to ask, very simply, how forming can be about spacing. Finally, the performative focus of the studio enabled a way of thinking through the fluid and fixed nature of spacing and forming. The course, in the end, was structured around a composite of relations that is not unidirectional but rather in a constant state of feedback between scales and disciplinary boundaries. The next section looks at the studio outcomes. After describing more closely what students produced for each project, this chapter will then focus on the studio outcomes in terms of scaling and spacing.

Studio outcomes

Each week, in both projects, students were supplied with a list of what tasks needed to be achieved – to supplement the brief and to integrate studio clearly with the final submission. Students began the spacing project by drawing the body in space. For this session they were limited to a space of their choice within the school. Plans were provided so they could record where their drawings occurred. From this simple base, students were then

asked to extend their initial drawings to communicate the relationship between body and space. They were given a series of words to prompt this stage as they explored spacing through drawing and modeling, which was followed by exploring the relationship between two and three dimensions. Students were then directed to return to the plans, to explore how spacing could be communicated in relation to more technical drawings. Students then recorded and mapped the movement of the body toward the building (at an urban scale), still communicating the bodies' occupation of space. Finally, students drew a composite drawing to communicate spacing at different scales through a singular drawing.

As the images illustrate, students drew their own or other bodies' engagement with space, focusing on distance, volume, movement, and orientation of the body, to make spacing present. Their work focused strongly on the moving body. Students communicated proximity between body and space (such as looking at door handles) as an intensity that cannot be measured. On the one hand, the activity of drawing and modeling enabled students to question how we reproduce our spacing, and how this is conditioned through our daily practices; the students highlighted these relations, then questioned and critiqued them. On the other hand, it is also apparent that students still reproduced a notion of the body projected onto space. The body became a way for them to order space. At times the drawings were reductive (complex relations were reduced down to a single line). The result was a range of responses. For the forming project, students followed the same process of exploration through weekly tasks, but now the project moved to form creation.

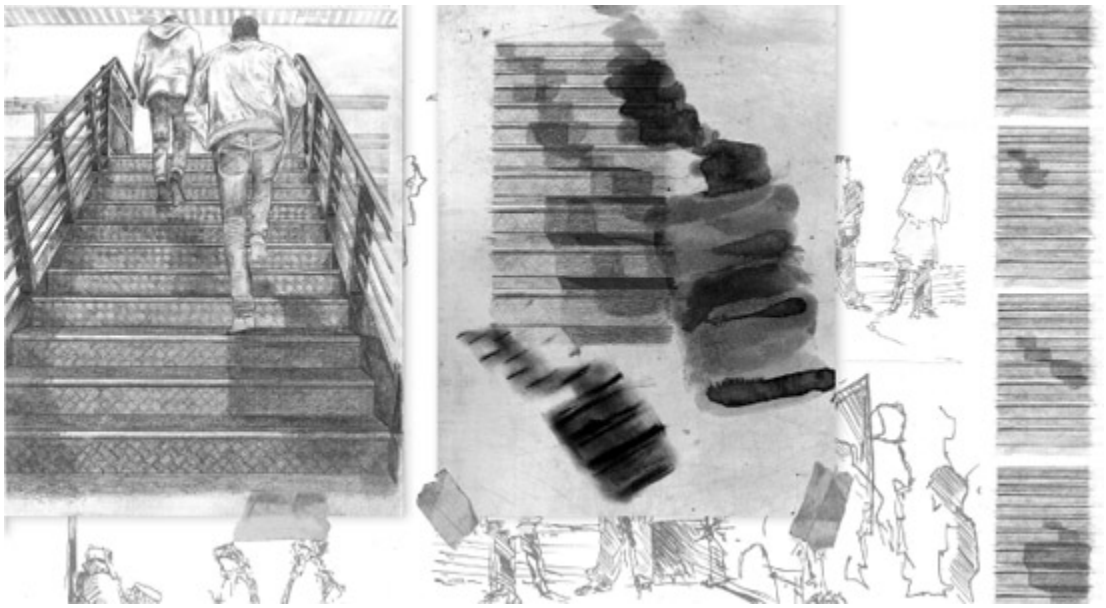


Figure 39.1 Presentation panel showing body occupying space and extracting the shadows, by Megan MacPherson, Spacing (2010)

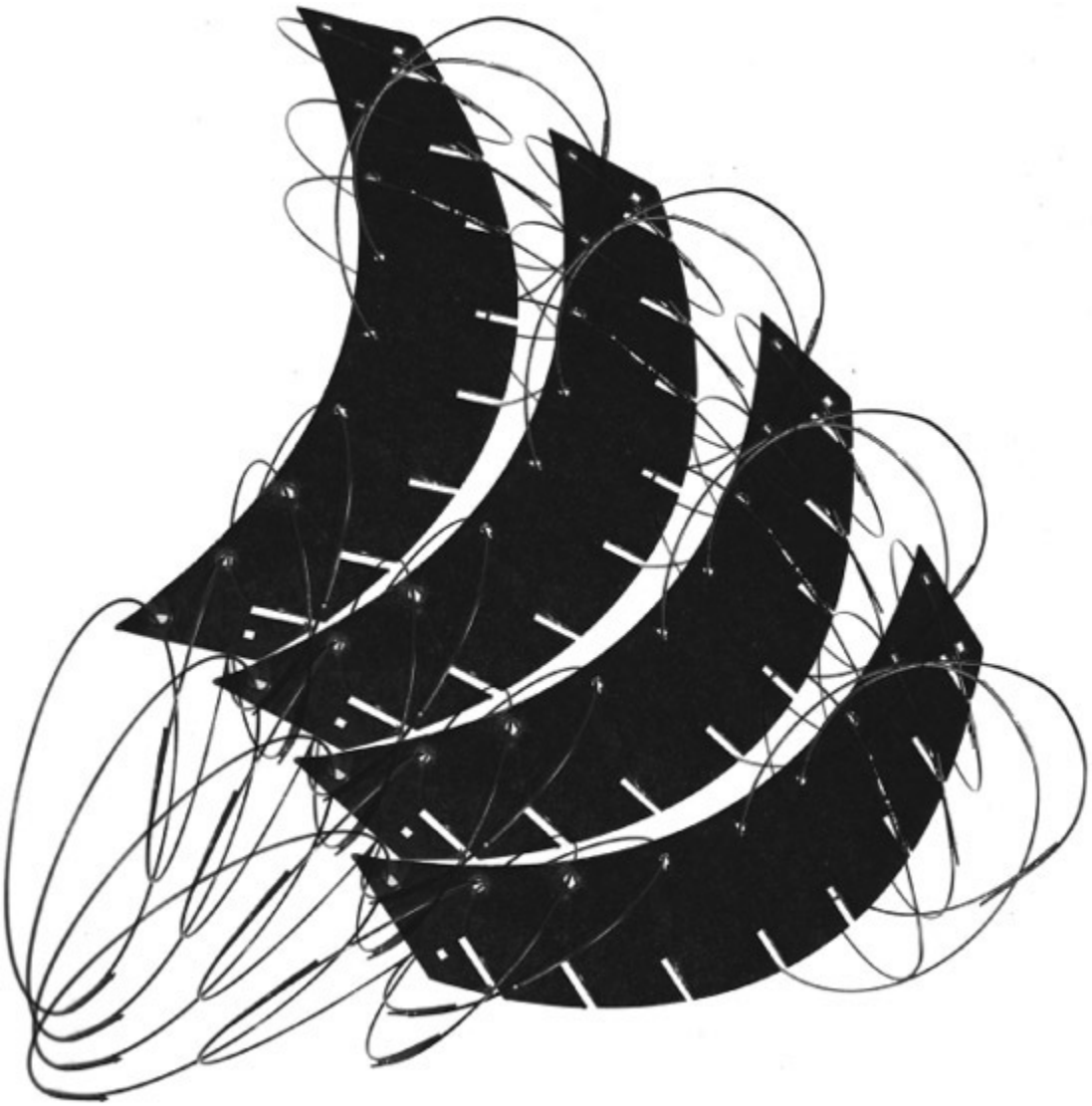


Figure 39.2 Image of model developed from drawing of the hand turning a door handle, by Matty Nuku, Spacing (2010)

Students started the forming project by choosing one image from five I supplied. They were told to choose one and to read it as a plan or a detail, and from it to create an axonometric drawing. Differing from the spacing project, students repeated each task on the Monday using analogue means, and then in the Thursday studio using digital means. Sketch-Up was used due to the size of the class, because only this program allowed more than 100 students to use the same program at the same time within the whole faculty. To support these sessions, we ran YouTube tutorials in which

a tutor went through the weekly tasks. This enabled students, in particular those with fewer digital skills, to have support through different modes of teaching. In the following week, after they had developed a wire frame, they added surface. A design brief was also introduced alongside surface to orientate how students might communicate the form or surface of their project. The program was a theater of the everyday. The program itself, of course, tended toward and prompted a focus once more on performance, time, movement, and proximity. After exploring cross-sections, students had to diagram their position on program. The final task for students was to create a space of how they would want people to feel in it.

The start of this project was driven by more pragmatic concerns, such as making sure students knew how to draw axonometrics, cross-sections, and plans, and by the necessity to shift 300 students from a studio space to settling into computer labs. The project was simple at first, but complexity was soon addressed when students addressed program – be it a shrine to two-minute noodles, a reading nook, or the over-subscribed space for contemplation, all of which infused the development of the project. Where form was treated like a container and boundaries were created around an object by the students, at the same time the atmospheric spaces the students created started to move away from form, creating spaces that blurred the boundaries between private and public and drawing on materiality to create spaces that were about an immersive atmosphere. A spatial condition of affect was threaded through programmatic stories of discovery, activity, performance, and wit.

Discussion: scale

While there are a number of outcomes that can be described from the studio, in this section I am going to focus on scale and spacing, particularly in relation to disciplinary boundaries. *Scale*, historically, is a term that describes a system of order and understanding of space through a standard measurement; it provides a particular way of understanding interiors, architecture, and urbanism. Scale is a language that defines space and quite

literally divides it. Rather than understanding scale as a proportional relationship between the body and the built environment, this studio approaches scale in different ways, though scale still acts as a structuring device performing its historical role in this assignment. Students were prompted to shift between scales – and in the last stage of the project to move up and down between scales – without a preconceived hierarchy of where one ends a design or what scale of design is more critical. Scale here is an action. Scale, or scaling, in the students' work is a story of intensities of exploration at a scale, or a "rhythm" of moving between scales, rather than closing space down to what can be measured and divided.[7]

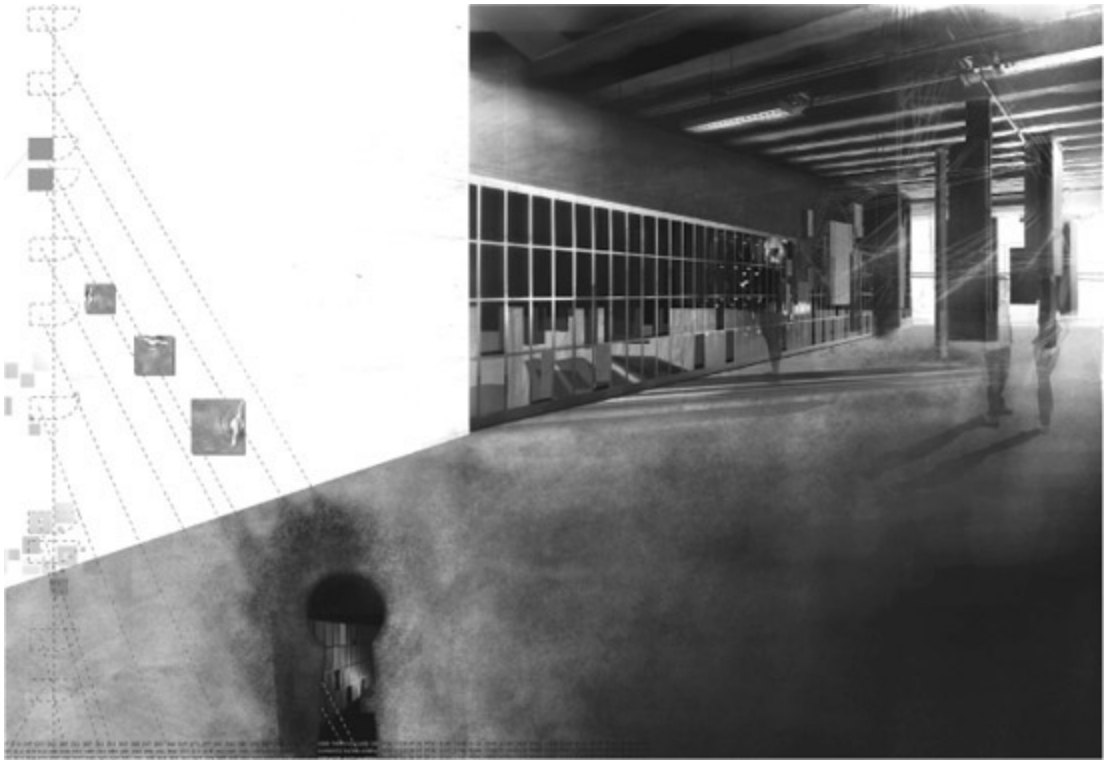


Figure 39.3 Presentation panel showing form, program, and atmospheric occupation by Ben Allnatt, Forming (2010)

Scale, though, could be considered as regulatory or transformative in terms of how the course itself was taught. Rather than naming and locating disciplines, the project deployed a strategy of moving between

disciplinary scales. This became apparent as staff teaching in interiors, architecture, and landscape were all invited to provide lectures in the course. Lecturers were given a choice if they wanted to identify with their discipline. Most spoke briefly about their affiliation to locate themselves, but they also spoke a common language of mapping, diagramming, plans, sections, and evoking feelings through drawings. Boundaries became blurred in terms of teaching and also in terms of understanding scale as a rhythm or an intensity. I am not trying to say that scale does not matter, not at all, instead I am bringing into the conversation that there are particular kinds of assumptions at play when it comes to scale. I suggest this project enables us to discuss the impulse to treat scale as a boundary, and to prompt us to consider scale and scaling as a "balance, strain, and tension simultaneously: of something that is consistent but has fuzzy borders."[8]

Spacing

These two projects look at how the spacing of the body and of the built is created, imagined, produced, and sustained, where students are actively theorizing relations through their drawings, models, and other forms of communication. Spacing is far from neutral in architectural discourse; it is extremely political, as much is invested in keeping the body and the body's material engagement with architecture separate from the aesthetic object or in trying to dissolve the line that separates the body from the built. In the students' work we are able to discern that the occupying body is bound and transformative, fixed and relatively stable, and fluid and chaotic, because the spacing of the body can belong to more than just one category.

If we are to focus on occupation first, the students were able to both explore and express how the body and space affect each other. By directing students toward spacing, they are allowed to focus on the body as lived, as "presence and absence, familiar and unknown."[9] The second project, which started with forming, was also about occupation and program. Through the student work of teasing out a "theater of the everyday," the aspect of performance that emphasizes everyday rituals and protocols

(where our relationship with space is defined, prefigured, and prescribed as outward influences) enables the world to be understood/made sense of.[10] Spacing enabled a way to draw attention to the body, to occupation, in a way that drew toward, at times, the historical, the regulated – but also, as already stated, the transformative.

Both projects were about occupation. The first assignment on spacing, in the end, actually conveyed more of an abstract understanding or potential of spacing than the forming project. At the end of the second assignment on forming, while given the opportunity, the majority of students did not create an isolated form from its surroundings, a container for relations, creating a boundary between private and public. Several projects showed that in some respects creating spaces could be indistinguishably urban, architectural, or interior. However, to convey occupation most students focused on the interior to tell a story about their assignment. In terms of communicating space as an atmosphere, as a space of occupation, the forming assignment conveyed this to a greater extent than the spacing assignment. In particular, through a focus on materiality, students created spacing within forming – through atmospheric space. The forming project illustrated that spacing can be a process within forming.[11]

Spacing gives rise to both conceptual and visceral knowledge, but one could add, so does forming. In the studio, both projects enable students to explore occupation in relation to space through doing. The most significant result is to begin to achieve the pedagogical goal of undermining discrete disciplinary thinking in order to nourish forms of design that unite interiors, architecture, and urban design, enacted through the students' design work itself. Students' exploration of occupation enabled them to cross disciplinary boundaries – through shifting scales – that was not unidirectional and without hierarchy. Students created connections through their design work. While the spacing project enabled students to explore occupation in an analytical way, the forming project enabled students to ask what space might feel like, and to create atmospheric spaces through materiality. The design work the students created, and the teaching process,

did not situate interiors as coming after architecture, but taught that it is part of a design process where each discipline enfolds each other.

Notes

1 For an outline of the varied interpretations of blended learning see, Pete Sharma, “Blended Learning”, *ELT Journal* 64, no. 4 (2010): 456–458.

2 See, for example, Ignasi de Sola-Morales, “Absent Bodies”, in *Anybody*, ed. Cynthia Davidson (Cambridge, MA: MIT Press, 1997), pp. 16–25; and Karen A. Frank and Bianca R. Lepori, eds., *Architecture From the Inside Out*, 2nd ed. (Chichester: Wiley-Academy, 2007).

3 Robert Imrie, “Architects’ Conceptions of the Human Body”, *Environment and Planning D: Society and Space* 21, no. 1 (2003): 47–65.

4 David Crouch, “Spacing, Performing and Becoming: Tangles in the Mundane”, *Environment and Planning A* 35, no. 11 (2003): 1945–1960.

5 Judith Butler, *Bodies That Matter: On the Discursive Limits of “Sex”* (New York: Routledge, 1993).

6 Peter Eisenman, *Written Into the Void: Selected Writings 1990–2004* (New Haven, CT: Yale University Press, 2007).

7 Albena Yaneva, “Scaling Up and Down: Extraction Trials in Architectural Design”, *Social Studies of Science* 35, no. 6 (2005): 867–894.

8 Stephen Legg, “Assemblage/Apparatus: Using Deleuze and Foucault”, *Area* 43, no. 2 (2011): 128–133, 129.

9 David Crouch, “Embodiment and Performance in the Making of Contemporary Cultural Economies”, in *Landscapes of a New Cultural Economy of Space*, ed. Theano S. Terkenli and Anne-Marie d’Hauteserres (Amsterdam: Springer, 2006), pp. 19–31, 25.

10 Ibid.

11 Eisenman, *Written Into the Void*, p. 67.

Part eight

Appropriations

Chapter 40

Death of the architect

Appropriation and interior architecture

Markus Berger

> *This disjunction occurs, the voice loses its origin, the author enters his own death, writing begins …*[1]

When Roland Barthes declared the death of the author in 1967, he freed the text from the dominant "god-like" theological presence of the writer, best captured for architecture in Ayn Rand's towering depiction of Howard Roark who "held his truth above all things and against all men."[2] The heroic figure of the architect has dominated much of the history of modern architecture, with manifestos, changes in style, and advancements in material and technology subsumed under his singular creative authority. By decentering the architect as a god-like author, following Barthes's cue, could we not engage architecture and its interiority differently? It allows for the lived experience of architecture (like Barthes's reader) to become more central to our understanding of the production of space, and by relinquishing origins and authorial intent, the built environment can be

opened up to multiple meanings/readings and creative appropriation for making and remaking the world we live in.

This approach to appropriation has profound implications for professional practice and education in architecture and relocates the much younger disciplines of interior architecture and interior design as not marginal but integral to it. After all, most of the construction industry in the United States is focused on the reuse of existing buildings, and the market for green buildings is exploding; the lion's share of the opportunity exists in retrofits, not new buildings.[3] Across a globe of human habitation, this massive stock of existing buildings – and remaking this built environment – requires a complete reconceptualization of architectural history and theory. The past of buildings cannot be merely narrated from a singular architectural origin, but rather has to be thought through its diverse social and cultural lives. The architect can no longer simply represent the body and soul of a building, rather the forms and spaces accumulate meanings through years of appropriation and acts of living. How do we account for this nonlinear history of architecture, and in what ways does it alter the role of the architect and the nature of architectural interventions? By thinking along lines of appropriation, this chapter explores an alternative roadmap for architectural practice at large.

The art of appropriation

According to the Oxford English Dictionary (OED), the noun *appropriation* comes from the Latin verb "to appropriate," and its primary meaning is to make "of a thing private property, whether another's or one's own; taking as one's own or to one's own use." To make a thing "one's own" is laden with both negative and positive meanings. It can mean privatization, theft, borrowing, copying, or adaptation. In cultural theory, appropriation has been described as "the adoption of elements of one culture by members of a different cultural group." However, it especially refers to "adoption … without the consent of the originating culture, and when the appropriating group has historically oppressed members of the originating culture."[4] Thus,

an act of appropriation can become a sign of submission to a dominant culture or of rebellion against it. In *The Production of Space*, Henri Lefebvre defines appropriation as a deliberate act to dissipate or replace feelings of domination.[5] In this sense, it can be understood as both an act of rebellion against authority and a way of negotiating the structures of inequality we find ourselves within. Architects, architectural historians, and photographers for architectural work tend to view and represent buildings as pristine, untouched by any real human interaction. Any disturbance in the form of use, practices of habitation, and alterations by people's belongings and lifestyles is considered as a violation of the "real" architecture – to be erased out of the visual record. From the point of view of heroic architecture, these acts of living are unwelcome appropriations that distort their pure design. From the point of view of those who "take over" the built environment, these are the very appropriations that give these places their identity, their soul.

Art has conceptualized appropriation even further, as not just a rebellious act, but also as a deeply creative one. The OED defines the distinct category of "appropriation in art" as a "practice or technique of reworking the images or styles contained in earlier works of art, esp. (in later use) in order to provoke critical reevaluation … or to challenge notions of individual creativity or authenticity in art." "Taking over" something existing (an ordinary object or another work of art) into a "new" work of art sets into motion a whole new set of potentials. Appropriation unsettles ideas of single authorship, originality, and authenticity established by conventional art history, but the relating of the old to the new is a creative intervention that sets into motion the many possibilities of recontextualization. Words and techniques like collage, bricolage, montage, pastiche, and assemblage come to mind. From cubist compositions of newspaper cuttings, wine labels, etc. to Marcel Duchamp's "ready-made" urinal to Barbara Kruger's reinterpretation of found photos, appropriation in art has unsettled our preconceived notion of things/objects and their place in time, and in so doing it has shown us the creative possibilities of rendering multiple points of view and nonlinear time. Appropriations as acts of intervention have thus

destabilized meaning as well as created new meanings. Artist Shepard Fairey's work, for instance, appropriated images and slogans and rearranged them to set in motion a set of different connections of visuals and meaning for the viewer. Appropriation, as Robert Nelson has explained, is "a distortion, not a negation of the prior semiotic assemblage."[6] In fact, its potential to make us think and interpret anew lies in our very recognition of these historical and cultural references. These references are not sacrosanct, to be enshrined in one dominant narrative, but rather elements of a constructed past which we must draw upon as creative raw material to give meaning to our present.

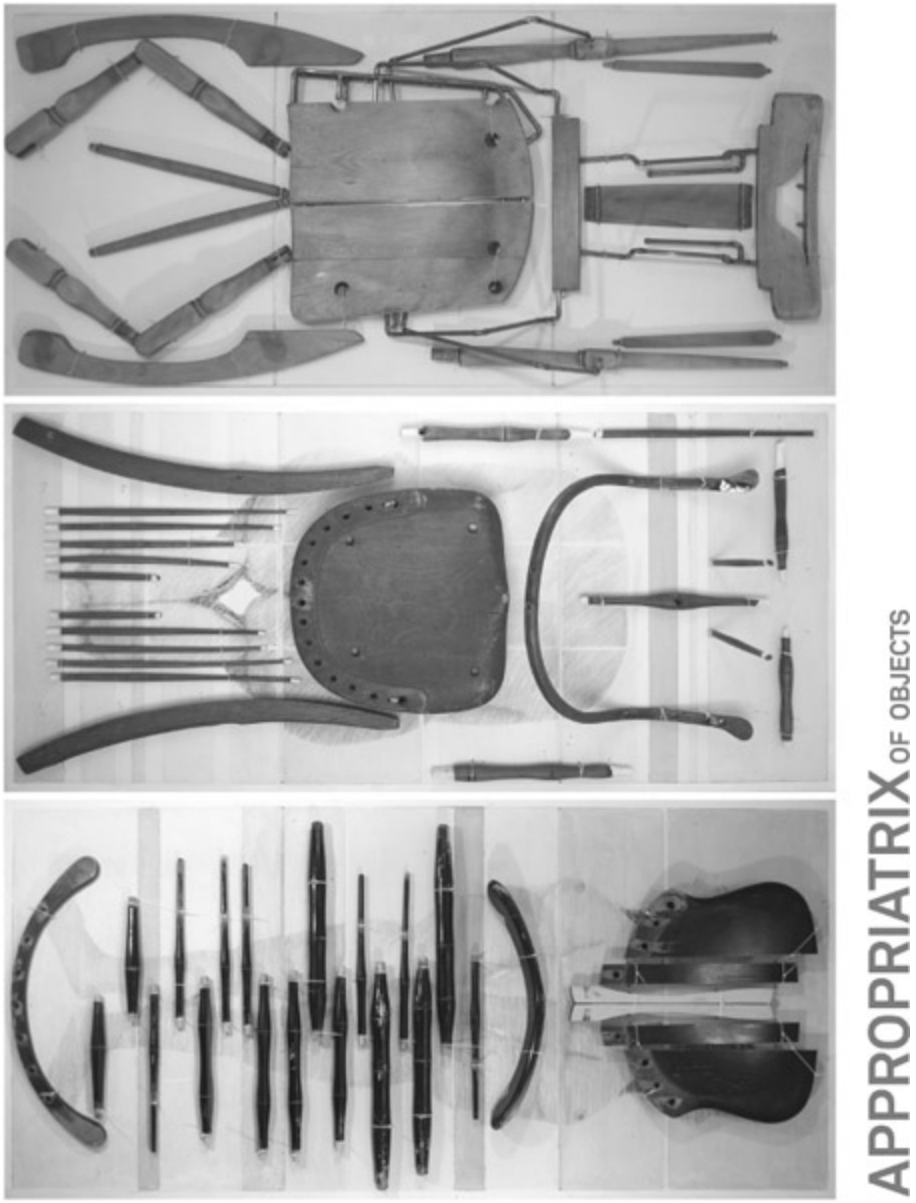
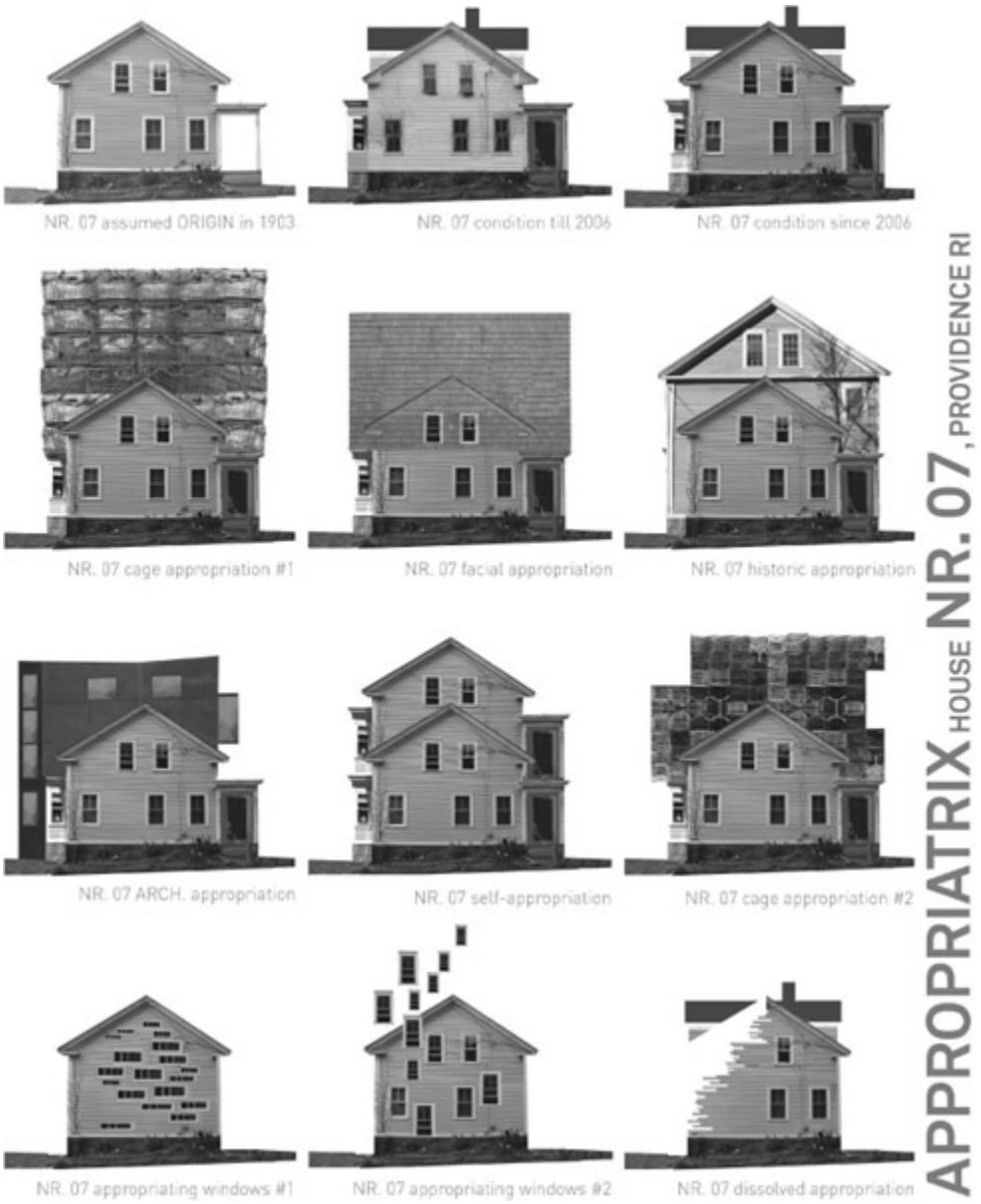


Figure 40.1 *Appropriatrix of Objects*

Image credit: Markus Berger

Architecture must do the same, for if we conceive of the architectural intervention as appropriation, then it must be self-conscious, rebellious, and creative in disposition. The reuse of building materials, as of spoils after a war, is as old as the built environment. These ancient appropriations did not simply recreate something "authentic," but rather

mobilized a set of references to shape public memories and display power.[7] Instead of attempting to return to and "fix" a building to a singular mythological origin, as much of conservation does, or of entirely erasing its undesirable past to repurpose an interior, as developers do, appropriation as architectural practice allows us to form a far more dynamic relationship with the living and breathing spaces that we take over and remake in new fields of meaning. Instead of viewing a building with a single identity, appropriation acknowledges the potential of multiple authors, multiple pasts, and the formation of a multiplicity of futures (Figure 40.2).


NR. 07 assumed ORIGIN in 1903
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NR. 07 cage appropriation #1
NR. 07 facial appropriation
NR. 07 historic appropriation
NR. 07 ARCH. appropriation
NR. 07 self-appropriation
NR. 07 cage appropriation #2
NR. 07 appropriating windows #1
NR. 07 appropriating windows #2
NR. 07 dissolved appropriation
APPROPRIATRIX HOUSE NR. 07, PROVIDENCE RI

Figure 40.2 *Appropriatrix House Nr 7, Providence RI*

Image credit: Markus Berger

An apprentice of appropriation

The German word for appropriation, *aneignung*, has two very different meanings: to take something away, and to learn something. This second meaning in German, to train until one has mastery and is able to make one's own, is what sets aneignung apart from the English "appropriation." In

German-speaking countries, a craft is still learned through the old medieval institution of apprenticeships, and an apprentice learns the craft through appropriation – thus referring to the learning aspect of appropriation. The apprentice learns through copying the matter; duplication and repetition without any original thought or experimentation is integral to the first process of appropriation of the master's skills. Richard Sennett reminds us in his book, *The Craftsman*:

> Craftsmen take pride most in skills that mature. This is why simple imitation is not a sustaining satisfaction; the skill has to evolve… . Slow craft time also enables the work of reflection and imagination – which the push for quick results cannot. Mature means long; one takes lasting ownership of the skill.[8]

Appropriation is thus more than just imitation of the master, it is the slow and long accumulation of skills that become "one's own." This is central to the making of "tradition," but it is not a static tradition, for as a set of skills become "one's own," the very achievement of mastery requires the apprentice to add something to what has been copied. Thus appropriation in this sense also recognizes slow change that is integral to "taking" and remaking.

In art history, what is passed down from teacher to student is rarely accounted for as vital, for the discipline is so focused on stand-apart "originality" that the only way to understand transmissions that shape us is through the idea of "influence" that can be traced between masters and ideas. Indian classical music, for instance, is passed down through the *guru-shishya* tradition, based on lineage and a relationship between *guru* (teacher) and *shishya* (student). For the student to become a master he must add something to the technical mastery he receives in his training with the teacher. That which he adds is not with the grand gesture of "originality," but rather it is the subtle soul force of creativity.

Another way to think about the slow, accumulated transformations and creativity of aneignung is through the image of the

palimpsest. In 1967, around the same time as Barthes's landmark essay, Rodolfo Machado's text "Old Buildings as Palimpsest" came out, in which he argued:

> remodeling can be seen as writing over, as underlining, as partially erasing, as interstitial writing, as a way of qualifying, accentuating, quoting, commenting upon, as digression, interlude, or interval, as a way of writing parenthetically, of setting off by punctuation, as a new form of an old story.[9]

Machado invites us to think of a building as a text that has many layers of writing on it over time but also marks and marginalia. Thus, when the building has to be repurposed, it becomes an encounter between layers of signs and different kinds of signs. As some are appropriated to make alterations in the building's function, "a new plot is composed out of the old words, a new interpretation has taken place."[10] Unfortunately, interior architecture largely ignores the rich semiotics and the multilayered histories of buildings, and follows instead a few simple approaches. Existing spaces and buildings are either completely rewritten or overwritten without leaving any traces of the earlier "words," or the new design is merely juxtaposed against the old in order to create a contrast. Both of these forms of interventions in interior architecture follow the mindset of either preservation, restoration, or heroic architecture. They desire a *tabula rasa*, a clear canvas on which the architect's authorship can be clearly differentiated and is visible to all; but if the ethos of architectural intervention took the form of aneignung then it would have a far more vivid canvas of habitation to "take away" from and add to, as an apprentice or a shishya must do to become a craftsman or guru, with the slow and subtle life force of creativity.

The copy toolbox

To copy is to make a reproduction of something, an imitation, a replication, or a transcript of something "original." So much fear has been created

around copying as the antithesis of originality, that repetitive copying has largely been removed from our education systems, and a huge body of laws on intellectual property have made appropriation a dangerous, instead of creative, task. *Copyshop*, a former retail site in Copenhagen (2005–2007), challenged these ideas of intellectual property by giving copying new meanings. This site became a platform for discussion of copyrights, patents, and intellectual property and the ways in which these legal interventions asserted control over the value and distribution of products in the market place. The site also critiqued this control by participating in the marketplace itself by creating merchandise such as "modified originals," "improved copies," "political anti-brands," or the "Supercopy" as a new original. In order to enable these ideas in the creation and intervention into the built environment, we need to "free" form, methods, and theory from current conventional belief and to bring appropriating back into our creative toolkit.

To appropriate, to rewrite, or to recontextualize is to transform something from one state into another state, and as a process it can generate the possibilities of simultaneously engaging multiple points of view and creating new forms of multi-authorship and multidimensionality. Interior architecture could apply and appropriate the techniques used in art, such as the mentioned collage, bricolage, montage, pastiche, and assemblage, as well as other more human- and environment-centered approaches. For example, in "Appropriating the Everyday" for everyone, each day, and every situation, we apply and use things and ideas for the simplest daily functions: a coat over the handrail, a cafe mug on the windowsill, or other applications that are considered as a resourceful "misuse" of an item or situation. This would allow the users to be part of the (design) process, shaping the environment as an active part of habitation (Figure 40.3). Or, in "Appropriating the Appropriation," we question and expand on the terms of originality, authorship, and authenticity in transformations. Here we deal with multiple forms of authors and originals to find the values of various sources and understand design as a continuation of possible further interventions in the future.

A travelogue: from something to somewhere

T.S. Eliot wrote, in *The Sacred Wood*: "Immature poets imitate; mature poets steal; bad poets deface what they take, and good poets make it into something better, or at least something different."[11] Interior architecture must break away from the frameworks of conventional architectural history and theory and develop its own conceptual tools that can reshape architecture as well. Appropriation as a striving for good poetry is a good place to start and can contribute to building a thoughtful design process that gives expression to existing spaces, remaking its usability, resilience, and sustainability. The striving, or the journey, is important and de-centers what the medievalist scholar Claire Sponsler has called "the recuperative project preoccupied with beginnings, sources, and the recovery of lost originals."[12] In her essay "Critical Terms for Art History," she argues that instead of "origin" or "influence," appropriation emphasizes the act of taking as "active, subjective, and motivated."[13] Appropriation in a lexicon for interior architecture has the same potential, to be an active, subjective, and motivated strategy that emphasizes movement rather than stasis. American writer Harry Mathews once wrote that "all books come from other books" and that "[w]hat matters in writing, as in music, is what's going on between the words; the movement is what matters, rather than whatever is being said."[14] Such ideas can generate a new framework for the use of the term in interior architecture and refocus the field beyond the formal and visual, further valuing the existing as essence for a new discourse of context, as understanding of space and place, and as new interpretations of narration that include memory. Only then can we advance towards Jean-Luc Godard's guidance, "it's not where you take things from, it's where you take them to," and therefore make the spaces our own.[15]

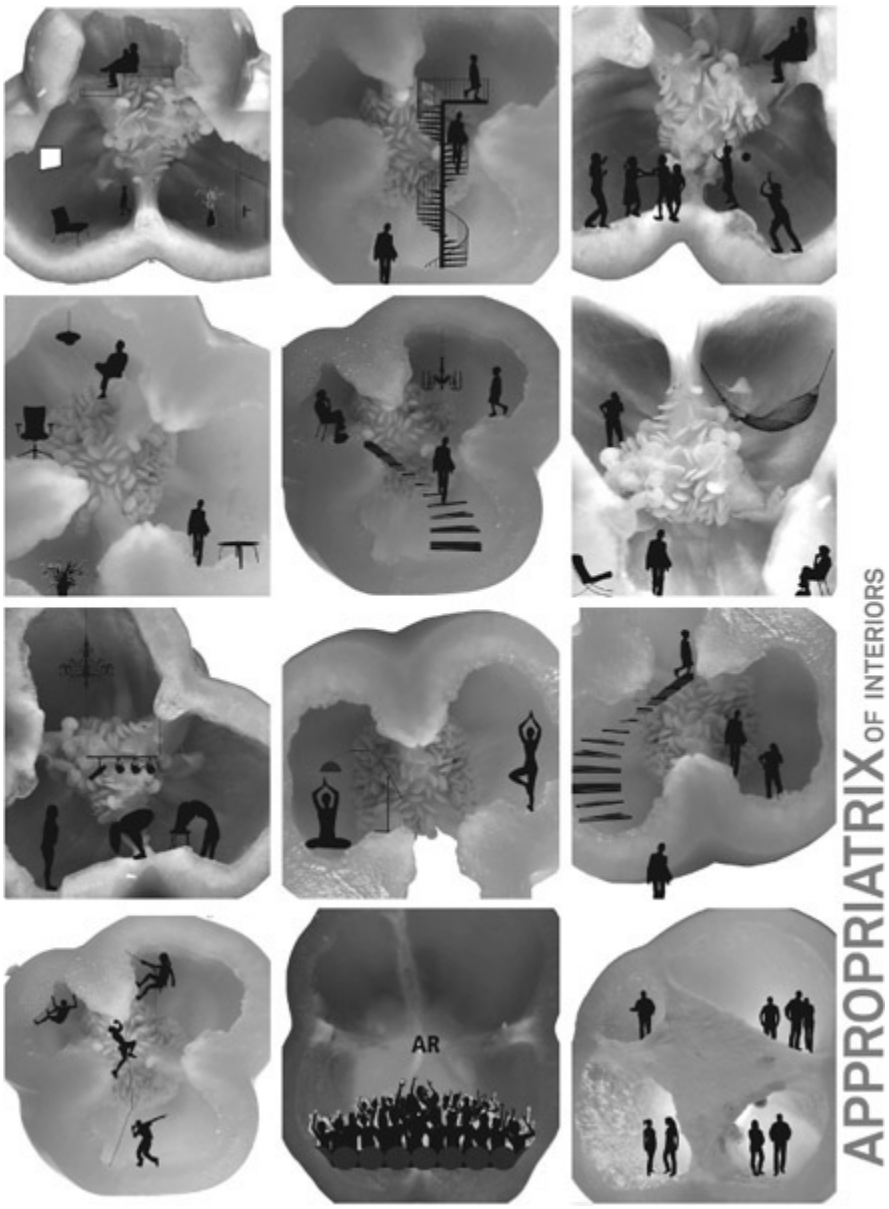


Figure 40.3 *Appropriatrix of Interiors*

Image credit: Markus Berger

"A work is never completed except by some accident such as weariness, satisfaction, the need to deliver, or death: for, in relation to who or what is making it, it can only be one stage in a series of inner transformations."[16]

Notes

1 Roland Barthes, "The Death of the Author", *Participation* (2006): 41–45.

2 Ayn Rand, *The Fountainhead* (New York: Plume, 2005), p. 711.

3 "Annual Energy Outlook", U. S. Department of Energy, Energy Information Administration, 2010, www.eia.doe.gov/oiaf/aeo/excel/aeotab_5.xls. Construction reports indicate that most of all design and construction work will be in existing buildings. The U.S. built environment comprises more than 77.9 billion square feet of commercial building space, and only a small percentage of that is new construction each year; Note: Read more: Jessica Dingwell, "Huge Growth in Retrofit Buildings Predicted: $10-$15 Billion Dollar Market by 2014" (2009), on Green Economy Post online, http://greeneconomypost.com/huge-growth-in-retrofit-buildings-predicted-10-15-billion-market-by-2014–5476.htm.

4 Eden Caceda, "Our Cultures Are Not Your Costumes", *Sydney Morning Herald online*, www.smh.com.au/comment/our-cultures-are-not-your-costumes-20141114-11myp4.html (last modified 14 November 2014).

5 Henri Lefebvre, *The Production of Space* (Oxford: Blackwell, 1991).

6 Robert S. Nelson and Richard Shiff, eds., *Critical Terms for Art History* (Chicago: University of Chicago Press, 1996), p. 163.

7 Markus Berger, Heinrich Hermann, and Liliane Wong, eds., *Interventions/Adaptive Reuse: Int/AR* (Providence: Rhode Island School of Design, 2009).

8 Richard Sennett, *The Craftsman* (New Haven, CT: Yale University Press, 2008), p. 295.

9 Rodolfo Machado, "Old Buildings as Palimpsest: Toward a Theory of Remodeling", *Progressive Architecture* 57 (1976): 47–49.

10 Ibid.

11 T.S. Eliot, *The Sacred Wood* (New York: Alfred K. Knopf, 1921), on Bartleby.com website, www.bartleby.com/br/200.html (accessed 28 April 2015).

12 Kathleen M. Ashley and Véronique Plesch, "The Cultural Processes of 'Appropriation'", *Journal of Medieval and Early Modern Studies* 32, no. 1 (2002): 1–15, available on the website of Project Muse, https://muse.jhu.edu/ (accessed 23 May 2015).

13 Nelson and Shiff, *Critical Terms*, p. 118.

14 "Composing: Harry Mathews' Words & Worlds", library exhibit, University of Pennsylvania online, 2004, www.library.upenn.edu/exhibits/rbm/mathews/mathews.html (last modified 26 October 2010).

15 Jean-Luc Godard, *Movie Maker Magazine*, 22 January 2004, on website of Goodreads, www.goodreads.com/quotes/search?utf8=&q=godard&commit=Search (accessed 12 April 2015).

16 Paul Valéry, "Recollection", in *The Collected Works of Paul Valery*, vol. 1, trans. David Paul (Princeton, NJ: Princeton University Press, 1972).

Chapter 41

The dialectics of appropriation

Graeme Brooker

The diverse processes of appropriation inform the basis of the descriptions of the discipline of interior architecture. This elemental feature of the subject means it is often assigned a "slippery" status[1]. At its most extreme, this perception manifests itself in the derivative view that the subject lacks a historical, theoretical, and regulatory foundation. In response, this chapter positions two things: first, that the "slippery" quality of the interior is of paramount importance: far from being a negative condition, it is a unique and fundamental feature of the subject. Second, that the substance of this spatial, disciplinary, and professional *ambiguity*, manifests itself primarily as a *composite construct* – a history, a theory, a space that is built from a number of differing ideas, objects, edifices, and other appropriated elements. This chapter will explore the idea that this ambiguous or unfixed quality manifests itself principally as an issue of semantics, and then as an intrinsic and essential spatial ambiguity. In opposition to negative associations, I would suggest that these qualities are elemental to interior architecture; they are fundamental to many aspects of the subject because appropriation and reuse – process-based approaches to formulating interior architecture –

ultimately create a particular design language: one that is explicit to the thinking about and the making of "architectured" interior space.

Because of this condition, the ambiguous nature of interior architecture can be understood and advanced through the exploration of a series of dualities. In this chapter I suggest that these dualities, or the *dialectics of appropriation*, give interior architecture its unique verbal and visual language. They are ideas and processes that inform the subject's distinctive cultures of research, practice, and education. These dualities might often be viewed as at odds with each other, yet, I suggest that *dialectical conflict*, the dichotomy of one idea superseding another, and thus rendering itself obsolete, is a redundant notion in this context. Instead, the *dialectics of appropriation* forms the basis of the composite construct of interior architecture; a set of processes that give the subject a dynamic resonance and ultimately its distinctive attributes.

Reuse and appropriation

Reuse and appropriation form the basis of all aspects of the subject of interior architecture. That is, they are processes that signify the repurposing of an object, edifice, or idea, all of which have been removed from their traditional contexts and deliberately repositioned into a new one. Julia A.B. Hegewald and Subrata K. Mitra clarify this position in the book *Reuse: The Art and Politics of Integration and Anxiety*, in which they suggest:

> Reuse essentially refers to using an item again. This can be an object, an edifice, building materials, a style, a law, a concept, a form of governance, an idea or anything else. It is a deliberate and selective process in which existing elements are borrowed and taken out of their former surroundings to be applied to a fresh context. For this to happen, a disruption and a break have to happen, favoring confrontation with something new. Reuse does not imitate and replicate; it is a creative combination of old and new elements which aims to take the item or concept further.[2]

When reuse and appropriation are used as the critical instruments of formation for architectured interiors, a fundamental change occurs in the materials used for the adaptation. Hegewald and Mitra suggest that an inevitable part of these changes are evident in the disruption to the normal qualities and conditions of any existing elements. These methods of instigating changes to any material implies that the dynamism, engendered by the processes of recombining differing elements, or the amalgamation of things that were never intended to be put together, can provoke a *frisson*. This disruption embodies *resonance*, a dynamic force that stimulates new value and hence significance in appropriated and reused elements. In other words, it forces matter to be reappropriated and reinterpreted in order to be read and understood in a new and different way.

Hegewald and Mitra also suggest that these processes encapsulate a disruptive component, a break in meaning, a *rupture* that is central to all appropriation techniques. They propose that reuse, and therefore appropriation, embodies disruption in order for old values to be assessed and for new meaning and understandings to be constructed with the newly reconfigured materials. At its extremes, these processes of change border on the brutal and can even be considered transgressive. Dale Kinney restates this *forcefulness* in *Reuse Value: Spolia and Appropriation in Art and Architecture From Constantine to Sherrie Levine*. He suggests, "There is always violence implied in appropriation; and the violence of the cut is always accompanied by the aggravated wound of separation."[3] Kinney goes further and suggests that appropriation can also exemplify power:

> As with reuse, particular acts or practices of appropriation can acquire positive or negative charge according to circumstances. Often the charge is political and in contemporary discourse it is frequently determined by the direction of the appropriation in relation to perceived distributions of power.[4]

However reuse and appropriation are utilized in the built environment, it is the role of the interior architect to direct and manipulate this distribution of

forces, maneuvering the power or the *resonances* of appropriation. Whatever the changes to appropriated matter, during the processes of their reuse there is a clear shift in meaning as elements undergo a significant change in the way in which they are utilized; a change that can also ultimately result in their demise. A point emphasized by Hegewald and Mitra when they state, "A significant aspect of reuse is that it is discerning and choosy, and that whereas some elements are adopted and filled with a new significance, others get deprived and emptied of meaning or even destroyed."[5]

Discourses of appropriation

Along with my rudimentary positioning of reuse and appropriation as primary elements in the production of interior architecture, I would argue that the conception and formulation of the subject consists of processes where ambiguity is a significant and vital condition. This is because architectured interiors are primarily composed of matter that is being placed into new contexts that they were never intended for. Another source of these ambiguous – or unfixed – qualities is found in the discourses surrounding the processes used to describe reuse and appropriation. In Michael Guggenheim's *Formless Discourse: The Impossible Knowledge of Change of Use*, the author suggests that there is a theoretical shortcoming in the literature surrounding the discipline of reuse and therefore, by association, interior architecture.[6] He suggests there are numerous reasons for this deficiency, and in particular he relates this weakness to the absence of the user in architectural thinking. Guggenheim proposes that up until the 1970s, the occupants of buildings were often merely used for the purposes of scale, particularly in representations of the built environment, and he suggests that a central concern of any interior discipline is human occupation. Therefore, this situation has ensured that the interior has not been suitably represented in earlier twentieth-century spatial discourses – in particular Modernism – where the nuances of occupation and use were often overlooked. He also notes that the authors of the existing literature on change of use appear to be

confused about what they see; "They see only typological change in the buildings and are unable to grasp the process related changes."[7]

Utilizing Latour's *We Have Never Been Modern*, Guggenheim explicitly connects change of use to the user or occupant of space. Latour identified three methods of understanding for working with existing architecture: he described buildings as technologies, signs, and interactions.[8] Guggenheim developed these three approaches further. He described them as *technological, semiotic, and sociological. Technologies* describes the understanding of the building through function, and how a particular use affected the user. In other words *technologically* oriented thinking positions the building through type or use. In contrast, a *semiotic* approach focuses on the sign or symbol of the building, rather than its material aspects. The semiotic properties of a building are described as signs that prompt the user to assume a particular response. Guggenheim used the example of a church spire as a symbol of the use of the building. Its appearance instructs the user to congregate and worship beneath it. The *sociological* (or interactive) approach reversed the technological and semiotic determination of use, and instead informed the user to act *on* the building regardless of its technological or semiotic implications.

Throughout the change of use processes, or the building's reuse and appropriation, Guggenheim suggested that the sociological or interactive properties were dominant. The building was to be defined by its new use. He explains that this is because:

> A building is erected and in our perception, its technological and semiotic properties are more or less intact, stable, and guide users. By changing use, which can happen without any material change to the building, the sociological properties take command: the building is now largely defined by its uses.[9]

He goes on to say,

> This does not mean that technological features no longer play a role, or that in the process of change of use architects and builders are not materially altering the building. However, the material properties become relatively less important to the sociological ones.[10]

The use of the terms "sociological" or "interactive" is useful. In the processes of creating interior architecture, forms of occupation are inevitable, as opposed to types of "function." In twentieth-century discourses such as Modernism, a functionalist approach to the design of the built environment is effectively rendered useless where the construction of a building is transformed via reuse or appropriation. As Fred Scott says in *On Altering Architecture*, "In a functionalist model, all works of architecture stand in danger of being considered, at some time or other, by some agency or other, as a waste of space."[11]

Guggenheim suggests that during change of use the typological classification of the building becomes ambiguous, primarily because matter is disrupted and meanings are shifted through the processes of a change of use. For instance, what was once a building created for a particular function, such as a courthouse, is unable to adequately express its change of use to, for instance, an apartment block, or say an art gallery. In Guggenheim's view, the literature or discourse on change of use fails to adequately describe this process, especially when only articulated through type-based categorization. He states, "Change of use itself simply does not fit the established classificatory order of architecture. It cannot be classified into categories such as building type, style, structural method, regional origin, name of architect, or materials used."[12] Guggenheim succinctly states the problems with adequately describing reuse and appropriation as a fundamental aspect of interior architecture. The lack of language available to adequately express the processes of reuse leads to the slippery conditions ascribed to the subject referred to earlier in this chapter. Guggenheim positions this as a problem, a failing that can only be remedied by inventing a language that is based around process, in order to ensure that buildings and their change of use

make certain an understanding between buildings and society. As he says, "the architectural discourse on change of use is a result of this inability to see, recognize, and talk about the processes of change, even when looking at changed buildings."[13] More importantly, he states, "Besides failing to establish a set of terms, the literature on change of use fails to classify its object. To classify means to introduce an ordering device by selecting and categorizing objects according to defined features." Defining these features is a task that assumes a position of power; it creates order in an otherwise disorganized world.[14] Rather than a failure to establish a recognized discourse, I would suggest that there is an opportunity for the development of language in interior architecture. Anything that is yet to be defined allows for openness as to how narratives might be framed, discourses can be positioned, and knowledge can be formed, critiqued, and established. This open quality of interior architecture discourses ensures that it remains fluid and flexible. Concomitantly, when something is fully codified, it is completed. It could be argued that in the processes of the completion of an element such as a building or space, something is lost, as Alistair Bonnet suggests:

> When the world has been fully codified and collated, when ambivalences and ambiguities have been sponged away so that we know exactly and objectively where everything is and what it is called, a sense of loss arises. The claim to completeness causes us to mourn the possibility of exploration and muse endlessly on the hope of novelty and escape.[15]

The failure to "clarify its object" is instead a positive and dynamic quality endorsing a continuous attempt to redefine interior architecture and its references. This open-endedness ensures that the architecture of the interior remains open to a multiplicity of voices and ideas. If reuse is uncodifiable, then the processes of making architectured interiors are invaluable and capable of expressing nontraditional ways of presenting interior space. As

Kinney states, “Reuse is noticeably nonconformist, exceptional, and ideological, rather than systematic and neutral.”[16]

Appropriate dialectics

So, if ambiguity is fundamental to the subject, what discourses may be useful to develop to assist understanding in the discipline of architectured interiors? In *The Emergence of the Interior*, Charles Rice described the doubled quality of the interior utilizing the “Two-fold Room,” a poem by Charles Baudelaire:

> Doubleness is manifest in the semantic development that marks the emergence of the interior… . The interior thus emerged with significance as a physical, three dimensional space, as well as an image… . Significantly, doubleness involves the interdependence between image and space, with neither sense being primary.[17]

He described the numerous possibilities of the fluctuations between the image and the reality of a house. In *A Topology of Everyday Constellations*, George Teyssot afforded the interior a dual dimension when he suggested, “The history of the house, oscillating between an ideal of transparency and the need for establishing certain forms of opacity, manifests a double, sometimes contradictory ambition.”[18] He suggested that domestic space contained a doubled undulation, one that constantly vacillated between private and public. All aspects of the subject of the interior can contain these dual aspects. In the distinct discipline of interior architecture, I suggest that the term *dialectic* can be used to describe elements, concepts, and ideologies that may be considered *violently* at odds with each other. Rather than doubled, I would suggest the *dialectic* is a useful device as it is intrinsic to interior architecture because traditional notions of dialectical variance, the dichotomy of one idea superseding another, are an unnecessary diversion. Instead, I suggest that the dialectics of interior architecture are very particular and connected entities formed through the appropriation and

explicit combination of elements that are not only at variance, but are often in diametric opposition to each other as well as the buildings that are being transformed. The dialectics of appropriation are spatial counterpoints, elements, and ideas; processes that are joined, stitched, or forced together in order to form a composite. This is a construct that affords interior architecture a number of fundamental attributes namely a dynamic resonance due to the forces of resistant and unfamiliar elements being incorporated together.

The emphasis that I am placing on the dialectics of appropriation is manifest primarily in the form of this spatial composite construct. This assemblage is an amalgam of matter that incorporates and is fabricated from a number of ideas and adapted elements. Composite constructs are formed from ideas and entities that can be described through the origins of a series of dualities, each of which is a particular description that is very specific to the comprehension and the realization of the architectured interior.

Old/new, in/out, space/place

What might the dialectics of appropriation be? The combination of both new and old elements is a familiar trope in the formation of interior architecture. Hegewald and Mitra explain that, "The meeting of opposites, for example the modern and the traditional, is not always a scene for peaceful accommodation. Dualities are sometimes overcome through converging affinities, leading to the creation of novel and hybrid forms."[19] The resonances created between the deliberate placement of something contemporary against – or within – an element of differing chronology, will always create a very particular spatial dialectic.

A threshold, such as the one between an interior and an exterior, creates a significant rupture in a continuous or possibly seamless spatial condition. According to Joy Monice Malnar and Frank Vodvarka in *The Interior Dimension:*

> One of the most fundamental divisions in design is that of interior from exterior, volume from mass. As the interior and exterior are perceptually separate, sustaining coherence between them is a difficult task. It entails a significant divergence in design approach, despite many shared theoretical assumptions and techniques.[20]

The problematic assignment of sustaining this division and the emphasis placed on the separation and materialization of these two conditions, ensures that the dialectic of in/out can be celebrated and condensed in a physical or cerebral element. The dichotomy inherent in the processes of appropriation, through the slippage and shifting of meaning in all kinds of matter, is particularly evident in edifices when change of use transforms them from redundancy to reoccupied buildings. Alistair Bonnet suggests that:

Figure 41.1 Old/New: FRAC Nord-Pas de Calais, Dunkerque; Lacaton and Vassal. The existing Halle building was "doubled" to create a new exhibition and event space.

Figure 41.2 In/Out: Red Bull Academy, Madrid; Langarita-Navarro. The threshold between interior and exterior was obscured when the old warehouse was reoccupied with a series of rooms in which to make music.

> Space sounds modern in a way that place doesn't: it evokes mobility and the absence of restrictions; it promises empty landscapes filled with promise. When confronted with the filled-in busyness and oddity of place, the reaction of modern society has been to straighten and rationalize, to prioritize connections and erase obstacles, to overcome place with space.[21]

These processes of conversion ensure that the dialectic of space and place becomes constructed through changes in use as well as the processes of decay, obsoletion, and reoccupation, and then the same again.

Figure 41.3 Space/Place: Maidan, exhibit; Bureau A. The riot shields were reappropriated in order to make a shelter, turning a space into a place.

The processes of making sense of what is extant and how it will be utilized requires a very particular sensibility, one that is predisposed to working on-site, and one that is concerned with a multiplicity of processes of reuse and also of appropriation. Hegewald and Mitra state:

> Reuse is a conscious and selective process in which existing elements are borrowed or salvaged and taken out of their former environment in order to be applied to a new context, or they are left within their old milieu but filled with new meanings, or they get manipulated and react to new external influences. This also includes resistance to certain elements. For this to happen a disruption or change has to take place, favoring a confrontation with something different.[22]

These processes form the basis of the interior architectural sensibility: a predilection for the extant and a profound curiosity for working with what is already there. The loss or change of meaning that occurs when things transform their original identities during the processes of reuse and appropriation means that those ambiguous, or dialectical, conditions are of paramount importance, as well as elemental to the languages used to describe it. The dialectics of appropriation are a set of ambiguous conditions, circumstances that are inherent in the semantics of interior architecture but which are elemental in the development of a composite construct; a space formed from counterpointed elements that are brought together through the processes of reuse and appropriation.

Notes

1 Henry Hildebrant, "The Gaps Between Interior Design and Architecture", *Design Intelligence* (2004): 1–8, www.di.net/articles/the-gaps-between-interior-design-and-architecture/ (accessed 8 May 2015 at 16.06);

John Gigli, Frazer Hay, Ed Hollis, Andy Milligan, Alex Milton, and Drew Plunkett, eds., *Thinking Inside the Box: A Reader in Interiors for the 21st Century* (London: Middlesex University Press, 2007), p. xi;

Clive Edwards, *Interior Design a Critical Introduction* (Oxford: Berg, 2011), pp. 2–8;

Paul Rodgers, eds., *Interiors Education Futures: Contemporary Insights* (Oxford: Libri, 2012), p. 1.

2 Julia A.B. Hegewald and Subrata K. Mitra, *Reuse: The Art and Politics of Integration and Anxiety* (New Delhi: Sage Publications, 2012), p. 3.

3 Richard Brilliant and Dale Kinney, eds., *Reuse Value: Spolia and Appropriation in Art and Architecture From Constantine to Sherrie Levine* (Farnham: Ashgate, 2011), p. 9).

4 Brilliant and Kinney, eds., *Reuse Value*, p. 8.

5 Hegewald and Mitra, *Reuse*, p. 4.

6 Michael Guggenheim, "Formless Discourse: The Impossible Knowledge of Change of Use", *Candide Journal for Architectural Knowledge* 4 (July 2011): 9–36, www.candidejournal.net/back-issues/ (accessed 5 July 2015).

7 Ibid., p. 13.

8 Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993).

9 Guggenheim, “Formless Discourse”, p. 17.

10 Ibid., p. 17.

11 Fred Scott, *On Altering Architecture* (Oxford: Routledge, 2008), p. 5.

12 Guggenheim, “Formless Discourse”, p. 19.

13 Ibid., p. 33.

14 Ibid., p. 19.

15 Alistair Bonnet, *Unruly Places, Secret Cities, and Other Inscrutable Geographies* (New York: Houghton Mifflin Harcourt Publishing, 2014), p. xiv.

16 Brilliant and Kinney, eds., *Reuse Value*, p. 3.

17 Charles Rice, *The Emergence of the Interior: Architecture, Modernity, Domesticity* (Oxford: Routledge, 2007), p. 2.

18 George Teyssot, *A Topology of Everyday Constellations* (Cambridge, MA: MIT Press, 2013), p. 24.

19 Hegewald and Mitra, *Reuse*, p. 2.

20 Joy Monice Malnar and Frank Vodvarka, *The Interior Dimension a Theoretical Approach to Enclosed Space* (New York: Van Nostrand Reinhold, 1992), p. xi.

21 Bonnet, *Unruly Places, Secret Cities, and Other Inscrutable Geographies*, p. 13.

22 Hegewald and Mitra, *Reuse*, p. 49.

Chapter 42

Puzzle

Rachel Carley

This chapter examines how constraints can be deployed to activate the interior and its contents in rich and variegated detail. It will identify how the French novelist George Perec enlists voluntary constraints to pry open potential space in his novel, *Life A User's Manual.* This chapter proposes that Perec's methods of literary construction open up discourses and debates with respect to how interior architecture can be taught, particularly how "layers" of constraints might be deployed to generate innovative designs.

In the last fifteen years, researchers have investigated the sociopolitical resonances at work in Perec's enumeration of quotidian spaces.[1] Articles shed light on his complex use of arbitrary formal constraints and their impact on diegetic continuity.[2] Some articles have focused upon Perec's indebtedness to art practices, such as Fluxus and the Situationists, in the use of strategies of chance, detournement, and collage in his texts.[3] In addition, a number of papers have examined the architectonic resonances at work in Perec's writings.[4] Enrique Walker has delivered architecture seminars and taught design studio courses at Columbia University that examine the relationships between architecture and constraint, looking towards Perec's writings for inspiration.[5] However, there

is scant scholarship to date on how Perec exploits constraints to fabricate interiors that reconceptualize the relationships between occupants, objects, and rooms.

Constraints are inherent in the mediums we use to represent ideas in written or visual forms. Within literary practice there exist a series of primary constraints that frame creative endeavor, including issues of grammar, spelling, and written composition. In addition to these, there are the constraints of genre that underpin literary expression. Interior architecture is also a practice that is subject to multiple primary constraints. There are the constraints that exist within industry, which guide the development and delivery of a project. These are laid out in the project brief, with its specific programmatic requirements. There are also restrictions imposed by budgets, building codes, and the specific exigencies of the site and the surrounding context to work within. Furthermore, conventional modes of interior architectural representation, such as plans, sections, elevations, and perspectives, impose their own limitations on how the interior is analyzed and understood. However, another layer of voluntary constraints can be superimposed over these primary constraints to enhance both literary and interior architecture practices. An artful and systematic manipulation of "second order" constraints can allow ample scope for innovation. It is proposed that the interior architecture studio could be a vital site of experimentation through the use of arbitrary constraints, opening up new territories of spatial, material, and technological invention.

Life challenges definitions of realism in literature by utilizing "Oulipian" constraints. Perec was a member of OuLiPo (*Ouvroir de Littérature Potentielle*, or Workshop of Potential Literature). Founded by Raymond Queneau and François Le Lionnais in 1960, this group was dedicated to the study of literary form based on systems of rigorous constraint, appropriating formal patterns and strategies from domains like mathematics, logic, and chess.[6] The types of literary forms the Oulipians pursued included the acrostic, spoonerism, the lipogram, and the palindrome.[7] They were of the belief that "systems of formal constraint – far from restricting a writer – actually affords a field of creative liberty."[8]

Innovation was at the center of Oulipian enterprise.[9] Their aim was to systematically introduce new forms of literary expression that operated against the myth of literary inspiration, offering an alternative to types of literature produced by force of habit. Oulipians utilized text in three-dimensional forms, such as poems for Moebius strip, anaglyphic text (a three-dimensional verbal text), and holopoems, which employ the idea of holography, representing poems as images in space, which, as the reader moves in, over, under, or around them, they discover new words or verses.[10] It was thought that by increasing the difficulty of the constraints imposed on the writing process, there would be an increase in the merit of its resolution. Thus, the success of Oulipian creativity was dependent upon "the difficulty of the problem and the elegance of the solution."[11]

The work of the Oulipians divided critics. Some saw their use of constraints as innovative, while others saw the application of constraints as pretentious. Perec believed that many within the literary establishment failed to acknowledge writing "as practice, as work, as play … Systematic artifices, formal mannerisms … are relegated to the registers of asylums for literary madmen." He believed constraints were treated as "aberrations" rather than respected for their literary ingenuity.[12] Warren Motte suggests that accusations of literary madness were targeted at the members of Oulipo "in order to suppress innovation and thus maintain the hegemony of the canon."[13] Potential Literature was in search of new forms and structures that could be appropriated by writers to advance the discipline.

Perec's comments give value to practice-based enquiry and experimentation. Another place where these values are fostered is the interior architecture studio, where students are encouraged to test new ideas, explore new modes of design representation, and develop critical thinking skills through practice-based research. The strategies used by the Oulipians to invigorate their discipline and question a priori assumptions about literary inspiration could be adapted and used within a design studio setting to assist students in synthesizing the complex matrix of relationships that exist in a design program.

Perec's novel *Life* demonstrates how constraints can be creatively deployed to activate interiors. *Life* describes a Parisian apartment building situated at 11 Rue Simon-Crubellier.[14] Saul Steinberg's drawing *The Art of Living* (1952) inspired the author. Steinberg's sectional perspective depicts a boarding house in New York, replete with residents surrounded by their sundry belongings. The building facade has been peeled away to expose a cross section of the interior, representing the apartment and its inhabitants at one moment in time. Valene, the apartment's oldest resident, provides a guided tour of the building's interiors. The key theme of the novel revolves around the complex art of jigsaw puzzling, inaugurating a dialogue between the puzzle maker and puzzler, the writer and the reader.[15] The puzzle becomes a metaphor for the literary constraints superimposed on the narrative: the puzzler has anticipated every move the puzzler will make; every combination has been calculated in advance. The reader needs to approach each chapter of the novel as a puzzle piece that relates to a larger story or picture.

The story of Gaspard Winckler, the puzzler maker, and his employer, Percival Bartlebooth, the puzzle solver, guides the narrative of *Life*. The English millionaire Bartlebooth undertakes a Sisyphean quest that, if successful, would destroy itself as it proceeded. He studies watercolor painting and then travels the world for twenty years, painting five hundred seascapes in five hundred different ports. When each painting is completed, he ships them to another apartment resident, Winckler, who makes them into jigsaw puzzles. Bartlebooth then determines to return to the apartment and spend the next twenty years reassembling the jigsaws, which Winckler has made progressively more difficult to complete. The final part of Bartlebooth's project is to revisit each port with each jigsaw intact, dipping the jigsaw in a detergent solution until nothing else is left but blank paper. No trace would remain of an endeavor that took fifty years to complete. But the project is thwarted by Winckler's cunning and Bartlebooth's deteriorating eyesight and premature demise.[16] Bartlebooth's plight can be seen as a leitmotif for the structure of the novel itself, which is underwritten by rigorous constraints that are ultimately abandoned by Perec as the novel

draws to a close.[17] In consciously building errors into his system of constraints, Perec was utilizing the Oulipian *clinamen*, a term Perec takes from Epicurean theory, which proposes that, "The world functions because from the outset there is of a lack of balance."[18] Perec's use of the clinamen in *Life* acknowledges that even the most exquisitely designed master plan cannot avoid factors outside of its control, such as death.

Part one: the use of constraints in *Life*

Two overarching systems of formal constraint operate as the scaffold for *Life*. These constraints determine the sequence of the chapters and the elements employed in each chapter. The layout of the apartments within the novel makes reference to the dimensions of an expanded chessboard, measuring ten stories high by ten rooms wide. The sequence of the chapters has been determined by the knight's tour of the chessboard, where the knight moves around the board landing on every square only once.[19] The second formal constraint Perec used involved an algorithm borrowed from higher mathematics known as the "orthogonal Latin bi-square order 10."[20] This bi-square was "mapped directly onto the block of flats, and for each grid location (that is, each room and chapter) it gives a unique pair of numbers, out of two sets only from zero to nine, or twenty 'elements' in all."[21] Perec used twenty-one bi-squares, each consisting of two lists of ten elements, resulting in forty-two lists in total, with "420 'things' to distribute, forty-two to a box (and never the same forty-two twice)."[22] Perec's twenty-one algorithms were used to elaborate pre-established lists of forty-two heterogeneous elements, including interior details, objects, furnishings, situations, literary allusions, and quotations, that had to figure in each chapter of the novel.[23] Nineteen of the forty-two specifications include descriptions of the interior architecture, furnishings, surface finishes, fabrics, and objects that populate each room.[24]

Each of the ninety-nine chapters of *Life* begins with a detailed description of a room within the apartment building. A selection of objects and interior details are described, and through these descriptions the reader begins to learn small, personal details about the residents occupying each room. Each object has its own itinerant history that helps the reader construct a partial biography of the resident. The psychological interiors of Perec's characters are not excavated in detail. The distancing effects of the narration throughout the novel are due to these indirect character

descriptions. They are also a consequence of the regulatory principles Perec superimposes on the narrative.[25] Throughout *Life*, Perec utilizes situationist strategies of detournement and collage, sampling existing texts and organizing them into new formal relationships.[26] Each chapter also includes a reference to one of Perec's other writings and an activity/event or object that he experienced as he was writing the chapter.[27]

Perec's ingenious use of these diverse combinatories, in tandem with his synthesis of literary precedent, affords the reader a dynamic and idiosyncratic view of radically different interior worlds found within the cellular structure of an apartment building. *Life* demonstrates how interior surfaces and objects, both individually and collectively, can activate rooms and the interior imagination more generally. Perec's articulation of the space between objects marks a space between significant events – signaling an irruption in spatiotemporal relationships. These condensations of different spaces and times are mimicked in the digital transactions students engage with every day in their search for inspiration. Students move swiftly across continents and vast time zones through digital networks to glean a diverse arsenal of research materials. Private interiors have never been more open to public scrutiny.

Part two: how designers can learn from Perec

Wardrip-Fruin notes that in *Life*, "Text and image, narrative and still life, the infra-ordinary and the outlandish tale are artfully combined."[28] To date, the author of this chapter has constructed and delivered two architecture and interior design studio papers that have been directly and indirectly influenced by Perec's novel. The first studio, *Intérieur*, required students to critically examine *Life*. By drawing attention to the objects, surfaces, and interior details found within rooms, the novel foregrounds what architectural educations tend to disavow: a detailed study of the interior that is not limited to the diagrammatic sectioning of this space but is, rather, redolent with detail that evidences a commitment to occupying the interior itself. Throughout the paper, particular attention was placed on the ways in which the interior was wrought in an array of architectural representations using different media.

In the second studio, *Natura Morta: Architectures of Still Life*, students were required to investigate how domestic objects, and the genre of still life in particular, could function as catalysts in the formation of innovative interior spaces. Each student was required to conduct in-depth research into this genre, locating its currency for contemporary spatial practice. This paper drew attention toward the significant role objects play in the formation and occupation of the interior, highlighting how quotidian objects can be studied to excavate their spatial potential.

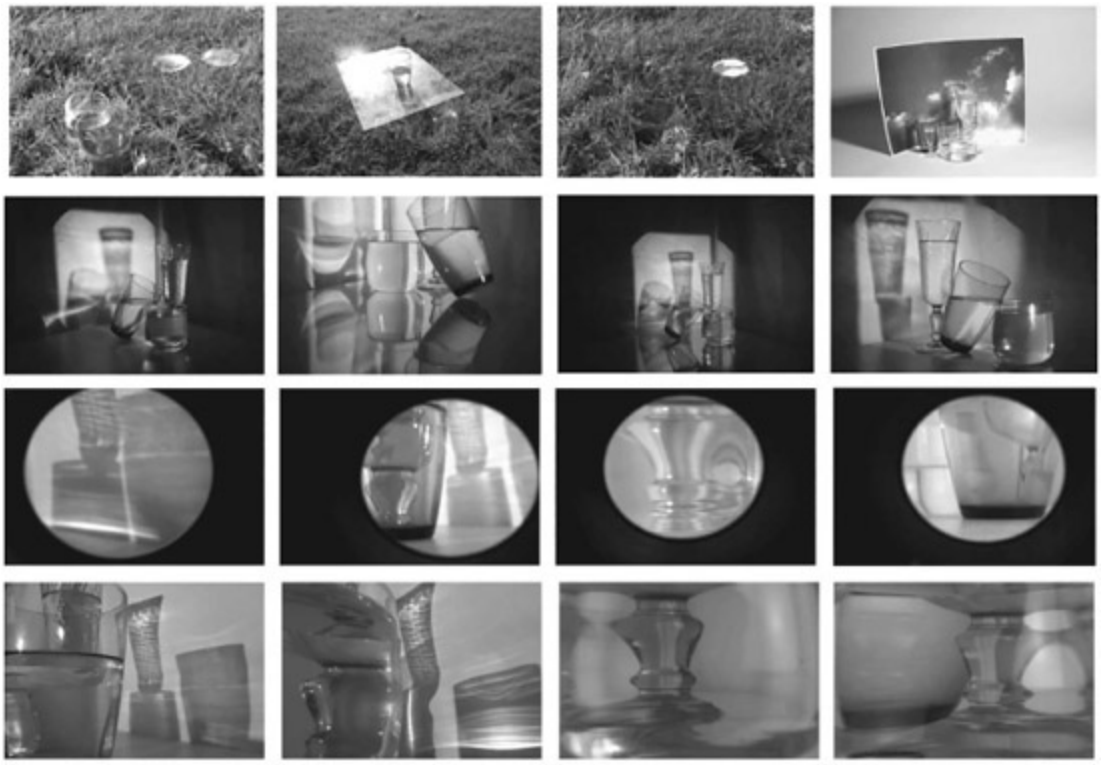


Figure 42.1 "Still Life Studies," 2012; Photographic studies for *Natura Morta: Architectures of Still Life*, Design Studio Paper (2012)

Image credit: Natalie Bradburn

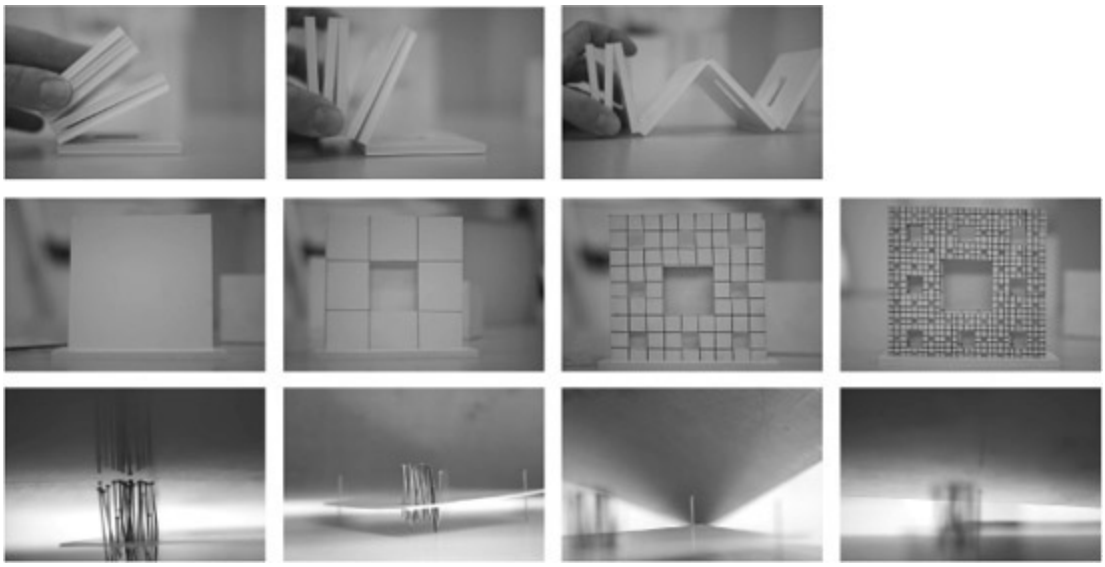


Figure 42.2 "Maquette Making," 2012; Photographic studies for *Natura Morta: Architectures of Still Life*, Design Studio Paper (2012)

Image credit: Natalie Bradburn

During the design studio, the students were directed to complete a series of twenty-five models as part of an iterative model-making exercise used to construct a series of hybrid forms. These forms were all generated from three initial concept models: the first interrogated an aspect of the student's bespoke research question; the second, a position on the site and context; and the third, a position on a design detail gleaned from their research. This exercise brought together disparate aspects of their design research to create conceptual and formal connections between them.

The next phase in the analysis of Perec's work will be to test and critically evaluate how a series of "second order" Perquian constraints can be deployed in the design studio to irrupt spatial conventions and modes of representation, introducing new design methods that foster the development of "potential space," a space of creative inquiry guided by voluntary constraints. How might new forms of spatial expression be introduced to the design studio, which, in line with the Oulipian's quest, operate against the myth of inspiration, providing an alternative to types of creative practice that are produced by force of habit? Students engage with a range of different source materials. They examine precedents from interior design, architecture, film, and fine art. They research historical and contemporary theories of space and placemaking, investigate the impact of new technologies on how we apprehend and experience the interior by analyzing the representational biases of computer rendering programs and gaming environments, and the possibilities inherent in interactive design platforms. Students also research the expanded fields of material culture, science, anthropology, sociology, and cultural studies.

There are a number of ways that these diverse influences might be analyzed and synthesized into design studio practice. The brief may require, through its very design, that students specifically identify key precedents,

theorists, or contemporary cultural phenomena that have informed their work. However, there are always many anxious moments in the delivery of a project from a student's perspective, as they have to identify how they can deploy these diverse influences to spatial effect.

The use of "second order" constraints may provide a new means of doing this by establishing an armature that coordinates and quantifies spatial, material, technological, and theoretical information to be embedded within the design project. It could include a series of compulsory spatial gestures, events, situations, objects, materials, and drawing and modeling notations that each student (or their tutor) would supply. This matrix of relationships would require the student to develop a design methodology to weave these multivalent strands of creative practice together. The collection of materials to be included would ensure the student acknowledged the life of the interior of a building in time: activated by the extraordinary events and ordinary rituals and performances of everyday life. By using such forms of rule-governed composition to juxtapose selected spatial, material, theoretical, and technical elements from the past and the present, there is the possibility that new idiosyncratic designs could emerge which amalgamate a diverse array of influences.

The use of such systematic, playful processes could irrupt a priori understandings of what might constitute an interior architecture proposition. It would do this by taking contemporary design precedents (which often become the center of a student's research inquiry) and ensuring they were analyzed in relation to other categories of design research (the sociocultural, theoretical, and technical), synthesizing them into part of a wider contextualization of placemaking. This would allow students to analyze the constituent relationships between objects, surfaces, subjects, and contexts.

Life challenges conventional hierarchies between objects and rooms, between contents and containers. The novel invites us to reconsider the hierarchies that exist between the interior architect and the interior decorator, making these discriminations not so clear-cut. It does this by politicizing objects: by acknowledging that interior environments are not

neutral but highly inflected spaces that demonstrate the occupiers' relationship to the contemporary social and cultural milieu they inhabit through the objects they possess and consume. *Life* shows us that voluntary constraints can aid and abet innovation. Warren Motte observes "in both theory and practice," Perec "severely questions such traditional distinctions as that between structure and theme."[29] Perec's synthesis of his formal literary proposition within his narrative intentions provides an example to students, who are encouraged to consider how their design concepts can be embedded into the material details of a project. Second order constraints offer the possibility of multilayered interior design propositions that acknowledge the complexities inherent in the inception, development, and occupation of a project over time.

Notes

1 Paul Virilio, "Paul Virilio on George Perec", *AA Files* 45/46 (2002): 15–18.

2 Matthew Escobar, "X: Identity, Reflexivity and Potential Space in Perec's *W Ou Le Souvenir D'Enfance* and Gide's *Le Faux Monnayeurs*", *The Romantic Review* 98, no. 4 (2007): 413–433; Kuisma Korhonen, "Narrating the Trauma: George Perec's *W ou le Souvenir d'enfance*", in *Terror and the Arts: Artistic, Literary, and Political Interpretations*, ed. Matti Hyvärinen and Lisa Muszynski (New York: Macmillan, 2005), pp. 113–128.

3 Tania Ørum, "Georges Perec and the Avant-Garde in the Visual Arts", *Textual Practice* 20, no. 2 (2006): 319–332.

4 David Bellos, "Writing Spaces: Perec in Perspective", *Cambridge Architectural Journal* no. 9 (1997–8): 11–18; Peta Mitchell, "Constructing the Architext: George Perec's *Life a User's Manual*", *Mosaic: A Journal for the Interdisciplinary Study of Literature* 37/1 (March 2004): 1–16.

5 Enrique Walker, "Scaffoldings", in *From Rules to Constraints: Luis M. Mansilla + Emilio Tuñón*, ed. Giancarlo Valle (Zurich: Lars Müller, 2012).

6 Raymond Queneau and François Le Lionnais, founded OuLiPo in 1960. The group included writers, mathematicians, musicians, directors, and specialists in electronics. There were two key research areas within Oulipo: the first focused upon analysis or *Anoulipism* and was dedicated to the identification and recuperation of older experiments in form, such as the sonnet. The second research area investigated synthesis, or *Synthoulipism*, and focused upon the invention and

elaboration of new forms. Warren Motte, Jr., ed., *Oulipo: A Primer of Potential Literature* (McLean, Illinois: Dalkey Archive Press, 1986), pp. 1–2.

7 An acrostic is a poem or word puzzle, or other written composition, in which certain letters in each line form a word or words. A spoonerism is a usually unintended transposition of two sounds in two or more words. A lipogram is the exclusion of a letter or letters from a written composition. Perec composed an entire novel, *La Disparation*, without the use of the letter E. A palindrome is a written text that reads the same backwards or forwards.

8 Motte Jr., ed., *Oulipo: A Primer of Potential Literature*, p. 18.

9 In the second Oulipian Manifesto, Francois Le Lionnais identified one of the preeminent concerns of the group, which was focusing upon the "Creative expenditure on the formal aspects of literary production: alphabetical, consonantal, vocalic, syllabic, phonetic, graphic, prosodic, rhymic, rhythmic, and numerical constraints, structures or programs". Francois Le Lionnais in Motte, Jr., ed., *Oulipo: A Primer of Potential Literature*, p. 29.

10 A process elaborated by Luc Etienne that involved the use of a text on a Moebius strip. Motte, Jr. ed., *Oulipo: A Primer of Potential Literature*, p. 211, 212.

11 Warren Motte Jr., *The Poetics of Experiment: A Study of the Work of George Perec* (Kentucky: French Forum Publishers, 1984), p. 19.

12 Georges Perec in Motte, Jr., ed., *Oulipo: A Primer of Potential Literature*, p. 5.

13 Motte, Jr., ed., *Oulipo: A Primer of Potential Literature*, p. 5.

14 Bellos, *George Perec*, p. 513.

15 Mitchell, "Constructing the Architext", p. 4.

16 David Bellos writes: "Bartlebooth's plan to complete a life without leaving a trace or a ripple on the surface of things must fail because it ignores death, or rather seeks to treat death only as an event that follows the completion of life, rather than as the radical imperfection that is in life and constitutes moral existence"; David Bellos, "Literary Quotations in Perec's *La Vie mode d'emploi*", *French Studies* 41 (1987): 193.

17 Peta Mitchell notes that in the novel the constraint of the bi-square is not completely realized, and the knight's tour fails to visit one room in the apartment (the cellar is missing). Many tales in the book also emphasize elaborate plans and schemes that are always foiled. Valene's painting of the apartment will also remain unfinished, left as a preparatory sketch when he dies at the end of the book; Mitchell, "Constructing the Architext", p. 13.

18 Perec deliberately omitted the 66th chapter of *Life*, corresponding to the 66th move of the knight's tour of the chessboard. Bellos comments on why this omission may have been made:

"Perec may have chosen to number 66 either because it mimics the novel's starting point on grid square 6, 6 or because it mirrors the inevitable number of the last chapter, 99: as 66 and 99 can also be seen as representations of German opening and closing quotation marks, the choice of move sixty-six for the gap may have been intended as a secret signal of the presence of unacknowledged quotations in the book, or, even more abstrusely, of the text's status as "text" Bellos, *A Life in Words*, p. 599; Perec says that he removed chapter 66 of *Life* "in order to break the symmetry, to introduce an error into the system, because when a system of constraints is established, there must also be anticonstraint within it. The system of constraints – and this is important – must be destroyed. It must not be rigid; there must be some play in it; it must, as they say, 'creak' a bit; it must not be completely coherent, there must be a clinamen"; George Perec in Motte, *Oulipo: A Primer of Potential Literature*, pp. 19–20.

19 Tom Emerson, "From Lieux to Life …", *AA Files* 45/46 (2002): 93.

20 Mitchell, "Constructing the Architext", pp. 9–10; Mitchell comments: "The chessboard itself also acts as a Latin bi-square of order ten … this bi-square … is a ten-by-ten array of squares, with each of the hundred squares ascribed a paired value from two sets of elements (traditionally an array of numbers and letters). There are two basic rules that govern distribution of the twenty elements in a bi-square of order ten: first, each of the hundred pairings must be unique, and second, each element may occur only once in any given row or column. In the case of *Life A User's Manual*, the bi-square dictates which objects and which quotations are to be found in each of the hundred rooms, but has little or no bearing upon the narrative development of the novel".

21 Bellos, *Georges Perec*, p. 515.

22 Ibid.

23 Bellos notes that Perec, "used twenty-one bi-squares, each comprising two lists of ten 'elements', giving forty-two lists in all, with 420 'things' to distribute, forty-two to a box (and never the same forty-two twice)"; Bellos in Mitchell, "Constructing the Architext", p. 10. In addition, each chapter, its title prefaced by its location on the gird square, included these relevant coordinates in the text of most chapters. Bellos, *Georges Perec*, p. 606.

24 See Lists 9, 10, 11, 12, 13, 14, 20, 21, 22, 23, 27, 28, 31, 32, 34, 35, 36, 37, 38.

25 David Bellos notes that Perec "gives the reader virtually no access to the inner lives of its named characters"; Bellos, "Writing Spaces: Perec in Perspective", p. 16.

26 This is emblematized by one of *Life's* central characters, Percival Bartlebooth, who was based upon two literary protagonists: Bartleby, from Herman Melville's short story, *Bartleby, the Scrivener: A Story of Wall Street* (1853) (New York: Melville House, 2004) and the central

character from Valéry Larbaud's novel, *The Diary of A.O. Barnabooth: A Novel* (c. 1913) (London: Quartet Books, 1991).

27 Bellos, *Georges Perec*, pp. 605–606.

28 Noah Wardrip-Fruin, "Writing Networks: New Media, Potential Literature", *Leonardo* 29, no. 5 (1996): 361. Fruin sees the structures and frameworks found in *Life* as having possibilities for the development of new media tools which enable authors to give connections and create structures using pad, a zooming interface that "brings continuous space and relative size to the presentation (and navigation) possibilities of new media." Fruin, "Writing Networks", p. 363.

29 Motte, Jr., *The Poetics of Experiment*, p. 16.

Chapter 43

Metropolitan hybrids

Programming for a thriving urbanity

Rafael Luna

With an expanding urban field blurring the lines between city boundaries, minimizing available land for construction, and increasing real estate values, there is a larger need for appropriating existing building stock to address the demand for accommodating diverse programs in a growing city. This effect has conditioned the development of new typologies derived from programmatic relations inscribed into existing structures. The existence of these new typologies comes from a need for maintaining a vibrant, uninterrupted urban landscape, intensifying urban cores, and adapting infrastructure into the urban fabric. These new typologies, which can be identified as metropolitan hybrids, acknowledge the importance of programming and *interior architecture* as strategies for developing contemporary architecture – not only through adaptive reuse, but also via new construction.

In this discussion, it is important to differentiate the categories of programming. These terms are sometimes used interchangeably, yet they describe a very different interior logic with very different intents. In the

context of architecture in the twenty-first century, programming can be classified into four categories: single-use buildings, mixed-use buildings, metropolitan, and hybrids, and we can postulate that a relationship exists between the different levels of urbanity and the different building typologies they create. The urban levels can be divided into village, town, city, and metropolis. The village, with a population of 100–1,000 people, is characterized by single-use buildings. The town, with a population of 1,000–100,000 people, introduces mixed-use buildings (generally one program on top of another) such as apartments on top of retail stores as low-rise or mid-rise buildings. The city, with a population of 100,000–1,000,000 people, develops the high-rise. The high-rise allows multiple programs to exist vertically. This is the prototypical mixed-use development, which attempts to maximize real estate. It is also the quintessential typology for the conception of metropolitan architecture. The next level of urbanity, the metropolis, with a population of 1,000,000 and over, starts generating the metropolitan hybrid.

Single-use and mixed-use buildings belong to a more practical group of programming, while metropolitan architecture and hybrids belong to a conceptual group. Single-use and mixed-use buildings are defined through real estate regulations, zoning, and building codes for occupancy. A single-use building would only allow one occupancy, as opposed to a mixed-use building which allow a combination of occupancies within permissible city and code regulations. Architecturally, this is a very compartmentalized relationship between programs, which is why they become terms mostly used in real estate with the intent of maximizing value. A direct appropriation of single-use and mixed-use buildings would require adapting an existing structure with an existing occupancy. Change in occupancy often becomes a factor of real estate commercialism, which has been a condition criticized by Jane Jacobs as described by John McMorrough in his essay "Good Intentions":

> The reevaluation of existing city stock, with the belief that degenerating neighborhoods contained within themselves a richness and diversity not possible in monolithic settlements, and

> similarly, the reuse of aged buildings, understood as being naturally far more heterogeneous than any feasible new replacements, were implemented as the basis for retail appropriation.[1]

Jacobs had a clear intention of creating a city that was diverse, active, and metropolitan. Her argument for mixed-use programming, short blocks, mixed-use buildings, and sufficient density are valid toward that ideal while reusing the existing building stock. McMorrough, however, points out that these are just "good intentions" that end up being exploited as commercial developments presented as mixed-use buildings. Such appropriations are evident in examples such as Boston's Quincy Market or London's Covent Garden. Although these are highly successful commercial developments, they promote a monoculture. Diversity cannot rely on simple commercialism. There exists a need to understand diversity and activation as architectural intervention maximizes the potential of a structure in order to strengthen the image of the city, rather than just a commercial exploitation. This can be explored through the conceptual programming group of metropolitan architecture and hybrids.

Although hybrids have existed for centuries (as seen in medieval walled cities using the wall as a protective infrastructure and housing for soldiers), metropolitan architecture is more closely related to the architecture that erupted from the growth of cities as a result of the American industrial revolution of the mid-nineteenth century and into the beginning of the twentieth century. The development of the high-rise during this era allowed for greater density within a confined city area, and the development of electricity allowed for the city to be active day and night, inside and outside. Conceptually, these are two technological advances that changed the way the interior space could be conceived. In 1969, Elia Zenghelis explored this potential by introducing the Urban Design class at the AA with the intent to explore "the advantage of millions living together in a restricted area," finding the "ideological foundations of metropolitan living."[2] Within a couple of years, the class shifted focus to understand the "values inherent in

the artificiality of the man-made world, within which urban form (or architecture) manifests itself."[3] This is the essence of metropolitan architecture, which could be defined in two ways: first, it mimics the cityscape (buildings that looks like a city); second, it embodies programmatic elements of the city (a building that contains a city) (Figure 43.1).

In the first definition, the form and massing of a building is designed to resemble the massing of the city regardless of its interior programming. An example would be the New York, New York Hotel in Las Vegas, where a group of several iconic towers from Manhattan are merged into a single building that resembles the New York skyline. OMA also used this strategy in The Hague City Hall competition, where the overall mass was divided into three bars that formed the silhouette of a grouping of skyscrapers. Another example would be the Mirador housing complex by MVRDV, where the building is conceptually a whole city block tilted vertically.

The second definition deals with the programmatic relationship of trying to create a city within the building. The architectural shell acts as a setting, and programming takes a priority role. To use Las Vegas as an example again, this effect happens in most hotels where the intent is to keep visitors inside a single building doing a variety of city activities like shopping, eating out at new restaurants, attending a theater performance, visiting museums, gambling at casinos, walking through parks, and seeing new art in galleries, all while remaining inside the building.

The definitions presented for metropolitan architecture describe buildings that have a certain autonomy from their context in that they create their own microcosms. If that is the case, these buildings can operate in a suburban condition, where they would become an attractor (like hotels on the Las Vegas Strip) as much as they would in a world capital where they would blend in, like a skyscraper in Manhattan. The skyscraper, being the quintessential metropolitan architectural typology, presents a great opportunity for exploring these microcosms in the field of adaptive reuse. The scale of these buildings makes them more prone to be adapted than dismantled, yet the appropriation of this typology becomes a challenge to

break away from a commercial strategy. In Venezuela, an example of such an appropriation occurred in La Torre de David. The change in political power stalled major construction, leaving incomplete buildings and a large demand for housing. La Torre de David in Caracas was one of these incomplete buildings: a 45-story skyscraper that was appropriated by local people facing hardship. The unfinished structure was adapted in an ad hoc fashion, filled with markets, gyms, services, shops, and dwellings. The dwellings were constructed from leftover and found construction materials; each family personalized their own unit, creating a real sense of diversity in this vertical city.

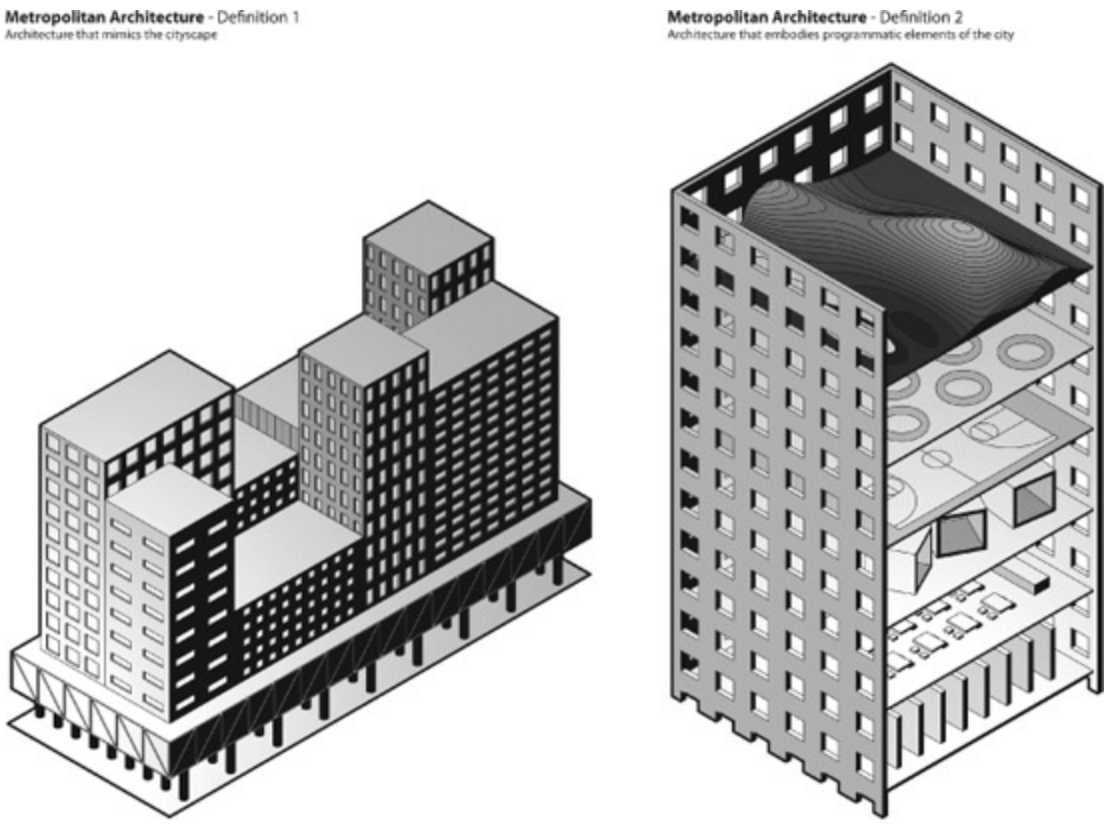

Metropolitan Architecture - Definition 1
Architecture that mimics the cityscape
Metropolitan Architecture - Definition 2
Architecture that embodies programmatic elements of the city

Figure 43.1 Metropolitan Architecture Definitions; digital drawing by Rafael Luna, June 2015

Image credit: PRAUD

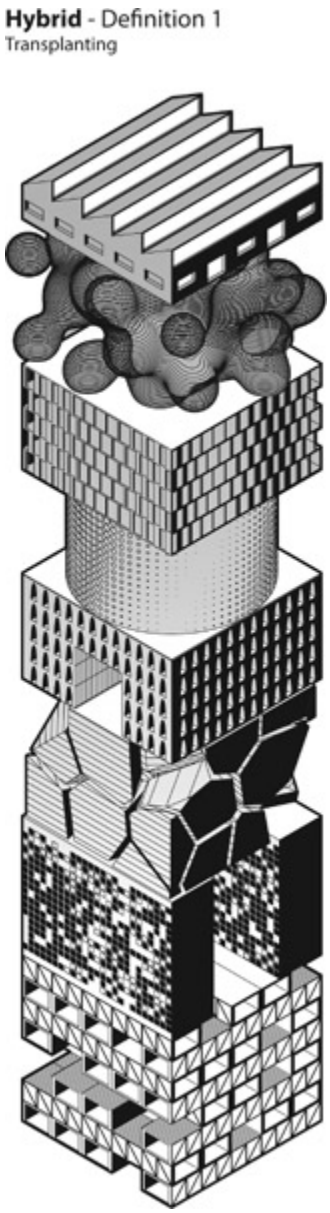
Hybrid architecture combines different typologies in order to create a new one. This can occur by a process of transplanting (Figure 43.2).

Hybrids can also occur through a process of program appropriation (Figure 43.3), which would take an existing building shell and inject a new program unrelated to the shell to create a new typology; an example would be an abandoned jail building injected with hotel programming to make a jail-hotel. In *Architecture and Disjunction*, Bernard Tschumi describes this process as one of "distanciation between the architecture and the program," where he points out three alternatives for this process to occur: cross-programming, trans-programming, and dis-programming.[4] Tschumi's programming process makes it more apparent that the architectural shell can be understood as an independent condition from the program. Appropriating existing structures with different uses generates the potential for unimaginable spaces that could not have been achieved otherwise.

A metropolitan hybrid evolves from the conceptual programming group as an architectural intervention that occurs from the metropolitan condition of density and diversity beyond real estate market demands and commercialization. It would be a merger between metropolitan architecture concepts and hybrid architecture. This demarcates a clear difference between a real estate concept of "mixed-use" and the metropolitan hybrid. Although these goals seem to be very similar – to have a diverse vibrant city – their programmatic intents are very different. The mixed-use development is guided by real estate and zoning factors. Metropolitan architecture is guided by the intent to create its own microcosm. The metropolitan hybrid has the intent of intensifying polycentrality and to maintain a continuous urbanity. This is achieved by conceptualizing programming as urban cores, urban systems, or infrastructure.

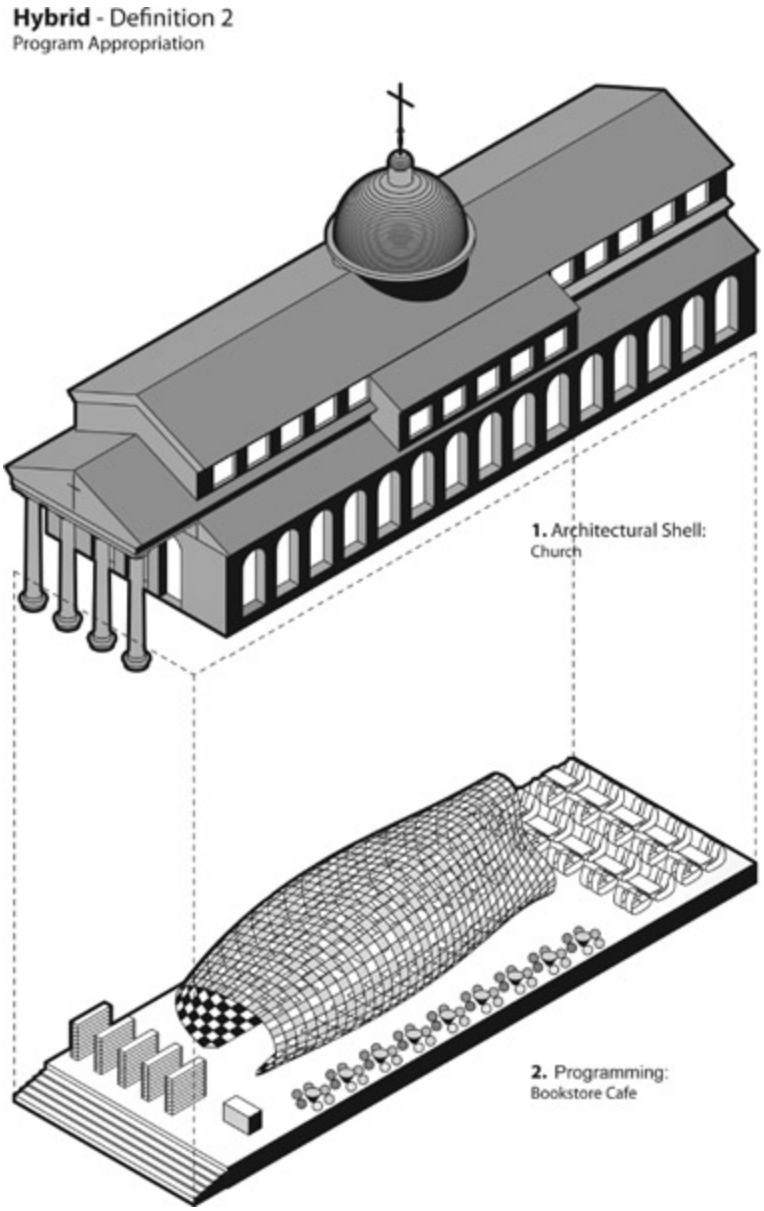
The first intent of the metropolitan hybrid (intensifying the polycentricity of the metropolis) can be achieved through multiple urban cores and urban systems. As an urban core, the metropolitan hybrid revisits the preoccupation of unrecognizable city patterns and urban growth. In "The Image of the City," Deyan Sudjic points out the difficulty of recognizing the shape of the city or defining it by pure statistics.[5] Population, area, density, and administrative boundaries do not tell the full story of a city. The image of the city depends greatly on who is navigating it. A tourist might only see

five percent of a city by visiting its main tourist attractions. Students might focus their attention to areas around their universities. Business people might spend most of their time around financial districts. These areas are centers of activity that are distributed throughout cities and can be defined as urban cores.



Left, Figure 43.2 Hybrid Transplanting; digital drawing by Rafael Luna, June 2015

Image credit: PRAUD



Right, Figure 43.3 :Hybrid Appropriation; digital drawing by Rafael Luna, June 2015

Image credit: PRAUD

Jose Luis Sert understood that there was a problem of loss of identity in sprawling cities and reinstated the need for a civic core. In 1944, Sert explained his concern in "The Human Scale in City Planning":

> I dread the pictures of the "city of tomorrow" which appear frequently in popular magazines, a "city" formed of endless suburbs; one small cottage close to the next one and a helicopter in every backyard! … As a whole, suburban trends seem to be favored and little or nothing new is suggested when it comes to the real problem areas or those nearer the center of our cities… . In all these halfway approaches suburbanism seems to prevail over urbanism.[6]

The civic core would define the city center, which was once the heart of the old city, and would act as an attractor. "This recentralization process demands the creation of new cores that will replace the old ones that the unplanned growth has destroyed."[7]

Recentralization needs to be better understood as reconcentration of activity, and rather than focusing on a single civic core, the metropolis must be understood as a collection of urban cores. These centers are resultants of singular buildings that infringe upon a hierarchy in the urban fabric and therefore attract development around them. In shrinking and postindustrial cities where either the population or an industry is declining, a variety of building stock is left abandoned, causing a loss of activity and gaps of metropolitanism. The challenge is appropriating these buildings with programming that injects new industries, making them act as catalysts. In 2012, the 22-story abandoned Middlesex County Jail was put up for sale in the city of Cambridge, Massachusetts. The state expected to have developers transform this brutalist shell into an attractor that brings more activity to that neighborhood. Developers proposed turning the building into a mixed-use building with luxury residential condominiums, offices, and retail to appease the neighbors. If the goal is to create a catalyst, then programming cannot be derived out of real estate speculation. Instead, it should be conceptualized as an urban core that aligns with the city's objectives for keeping young entrepreneurs interested. If we think about the needs of recent graduates and young entrepreneurs, there is a large demand for more affordable housing, affordable office space, access to venture capitalists and

financing, access to human capital, and exposure to the public for networking. The building could have been conceptualized as a micro-industry building filled with smaller offices and micro-housing units that would allow startups to have working space while sharing bigger facilities, create a mixing between industries and a merger between work space and living space. The building should include spaces for financial institutions, exhibition spaces, and lecture spaces, as well as shared amenities. In Korea, these types of building and programming exist as micro-factory buildings, where a single building houses hundreds of factories that produce merchandise in small rooms, with each room being its own company. These buildings could be adapted by integrating additional social and commercial programming to invite outside people into these scenarios and promote the industry. A catalyst building needs to be an extrovert and cannot rely on programming that promotes monoculture. Commercial appropriations hinder the creative programming process for diversity, especially if the purpose is to have multiple cores.

Polycentrality would also require conceptualization of metropolitan hybrids as urban systems. This would change the notion of a "city within a city" to a "system within a city." In 2014, the City of Boston announced its bid for the 2024 Olympics. To do this, it needed to meet certain requirements. It would need visitor centers, of which there is currently only one, and it would need to build an additional 15,000 hotel rooms in order to bring the count to the necessary 45,000 required by the Olympic committee. This would mean that Boston would need to build about seventy-five new hotels of two hundred rooms each. Instead of building seventy-five new chain hotels, it could address the need for visitor and information centers and the need for hotel rooms by hybridizing both. This would create a network of recognizable information centers, visitor centers, and accommodations that not only benefit tourists but residents as well, rebranding the city by providing a perceptible typology of organization and city navigation. Through adaptive reuse, a city could brand itself by creating these systems, as seen in Venice for the Venice Biennale, where the whole city functions as a museum by distributing exhibitions in various

palaces throughout the city. This encourages visitors to navigate the whole city, as opposed to just visiting key sites, and transforms potentially mundane buildings into part of a bigger agenda.

The second intent of the metropolitan hybrid is to maintain a continuous urbanity. The majority of disruptions in the urban fabric occur from infrastructure. As new technologies emerge and new infrastructure is developed, old infrastructural systems become obsolete, leaving empty voids in the urban fabric. Transportation infrastructure creates the most apparent disruptions; train lines bisect the city and elevated highways leave underutilized spaces. Yet, transportation infrastructure presents the biggest potential for adaptability and reuse because of their existing structures. In Tokyo, highway infrastructures merge with retail or residential, making the best use of a structure that already exists. The High Line in New York City transformed an old elevated train track into a linear park to provide a new pedestrian network. In the Netherlands, NL Architects adapted a highway overpass into a series of urban programs that activated the space with a market, flower shop, skatepark, kayak canal, and parking.

The continuity of growth and prosperity in our cities depends on understanding different programmatic intents. It should not confuse the commercialization of real estate and the true potential of injecting hybrid programming that intensifies the core, generates systems for the city, and optimizes infrastructure. The metropolitan hybrid allows the evolution of the city as real estate speculation, changes in industry, changes in political power, and urban renewal have created abandoned or unfinished structures across cities worldwide.

Notes

1 John McMorrough, *Good Intentions*, in *The Harvard Design School Guide to Shopping*, ed. Judy Chuihua Chung, Jeffrey Inaba, Rem Koolhaas, and Sze Tung (Koln: Taschen, 2001), pp. 370–379.

2 Elia Zenghelis, “Syllabus for Urban Design Course at the Architectural Association”, Unpublished manuscript, London, 1969, selected pages.

3 Elia Zenghelis, *Urban Design Course: Introduction* (London: Architectural Association, 1971), selected pages.

4 Bernard Tschumi, "Abstract Mediation and Strategy", in *Architecture and Disjunction*, 6th edition (Cambridge, MA: MIT Press, 2001), p. 205.

5 Deyan Sudjic, "The Image of the City", "The Hundred Mile City", in *The 100 Mile City* (New York, London and San Diego: Harcourt Brace and Company, 1992), pp. 295–309.

6 Jose Luis Sert, "The Human Scale in City Planning", in *New Architecture and City Planning: A Symposium*, ed. Paul Zucker (New York: Philosophical Library, 1944) [reprint: New York: Books for Libraries Press, 1971], pp. 392–412.

7 Ibid.

Chapter 44

Design activism

Commingling ethics of care and aesthetics

Lorella Di Cintio

> *It is important for everyone to understand that the vast majority of these products that we recalled were the result of a design flaw in Mattel's design, not through a manufacturing flaw in China's manufacturers.*[1]
>
> *Toys. Drywall. Toothpaste. What I play with, where I enclose myself, and how I cleanse my body have become the sources of controversies of our time. Today, it is not unusual to hear or read about designed objects and spaces being in the media for product violations, recalls, and hazards. Toxic materials are entering our bodies and the environment.*[2]

In this chapter, discussions are put forward by several authors surrounding abstract ethical and philosophical issues to argue that a so-called breach of trust has occurred within the design community. Jean Baudrillard's book, *The Systems of Objects*, for example, suggests that design is reaching its end

in terms of being truly socially progressive – or even meaningful.[3] Franco Berardi has postulated that society's obsession with futurism and progress needs to come to an end, and that the race for ingenuity has failed.[4] In his essay "Human Excess," Jean-Luc Nancy attempts to link excess with humanity's responsibility:

> Each of these gestures is the reverse of the other, so that the proliferation of large numbers in our culture, our interests and our needs (the size of a computer memory, the price of a nuclear submarine, and so on) also defines the exponential growth of such responsibility.[5]

Here, we can begin to understand that the sheer size of humanity makes it inseparable from morality and dignity, concluding that justice needs to be rendered. As a result of this above-noted discourse, I believe that contemporary designers are currently facing new questions about design. Has the time come to end the practice of market-driven aesthetics? Is design dead?

Discussions about excess and responsibility have revealed discriminatory practices found within the design profession and have simultaneously fueled dissenters attempting to make change. In *A Theory of Justice*, John Rawls offers designers some insight for change as he stressed the need to consider sociocultural behavior as involving a mixture of equality and justice.[6] This chapter draws from Rawls's most well-known and often-quoted term, "justice as fairness," along with his concepts of a "veil of ignorance" and the "original position." Thus, this discussion is based on the premise that if justice is to be fairly distributed, and the legality of the social construct of equality is to be solidified, then a new design discipline must emerge.

This chapter asks the reader to consider some important design questions: If design is creatively purposeful, then what purpose does design serve? Can the rubric of consumption be a two-way street between prosperity and sustainability of humans, the environment, and the

economy? What would happen if designers took on ethical pursuits when designing toothpaste, interior spaces, or toys before conceiving aesthetic considerations? Is it possible to design in opposition to the demands of the market and still meet the basic needs of enjoyment, shelter, and health?

The following will comingle philosophical ideas about the ethics of care and aesthetics within the design practice. Conceptually using a legal terminology – piercing the veil – this discussion seeks to provide evidence that a *breach of trust* has occurred within the design community.[7] How has this happened, and who is responsible? Have corporate market demands denied designers the opportunity to pursue or practice ethical behaviors? Are designers being used as agents for global capitalism? If a breach of trust has occurred, is it time to seek justice for the users, makers, and waste collectors of designed objects or spaces? Should we go so far as to call for the end of design and designers?

At times, in this chapter, the two principal themes – the ethics of care and of aesthetics – will be explored separately to provide historical context; at others, they will be discussed together. Similar to Jacques Ranciere's investigation of what ties aesthetics to politics, here design is explored as it relates to justice.[8] Finally, this discussion will explore the possible need to redirect design practice toward design activism. It challenges designers to practice the ethics of care, or *ethical aesthetics*, and to politicize their production as a daily pursuit. These processes would encourage a paradigm shift in which education and practice must change, expert knowledge methods must be diffused, and market-driven practices must be scaled back drastically.

Ethics and aesthetics

According to the ancient Epicureans, "good equals pleasure" and "evil equals pain." They noted that overconsumption causes physical pain to the external physical body: this pain then spreads and damages the internal mind of tranquility. According to the Kantian ethics model, it is important to maintain commitments to specific values. Kant's categorical imperative can

be defined as a way of evaluating motivations for action. He argued that individuals should live by the following categorical imperative, which helps identify moral duties: "So act that you use humanity, whether in your own person or in the person of any other, always at the same time as an end, never merely as a means."[9]

For design professionals, the Kantian imperative can be a form of professional ethics. The traditional role (duty) of an interior architect is to produce for manufacturers and/or patrons targeting a specific socioeconomic population. Designers can, however, consider rescripting the nature and practice of design based on the Kantian ethics of duty. For example, Kant went on to suggest that duty means equality and fairness for all, or in other words, *design for all*. Thus, design practitioners could expand their sense of duty beyond the market model and move into the realm of the politics of lawmaking (design law). The formulation of design production laws might better serve humanity as a whole. Issues of health, safety, and welfare would move beyond professional practices, like building codes and regulations, and incorporate the often forgotten individuals who help manufacture, live with, and collect the waste products of mass-consumed objects and spaces. Designers could step back from the dominating design paradigm of duty and move toward action that has "genuine moral worth."[10]

According to Michel Foucault, "not everything is bad, but … everything is dangerous." If this is the case, then we must always "do something" which "leads not to apathy but to a hyper- and pessimistic activism."[11] Foucault's ethics often incorporated a repressive hypothesis model, which eventually would be referred to as the "Foucault effect."[12] For instance, some feminist and queer theorists have justified their activism modalities based on Foucault's writings.[13] Essentially, this discourse requires the practice of self-critique, which is related to how the Epicureans tried to understand the self from an ethical perspective. In this way, the ethics of design can be connected with the tactical positioning of design activism.

To further this discussion and offer a potential strategy for commingling ethics and aesthetics, both Nietzsche and Foucault offer an "aesthetic of existence," which could be a promising roadmap for designers:

> we need art [design] not to make us immoral, or to take us beyond the sphere of the ethical, but to enable us to carry on being moral in the fate of our recognition of the terror and absurdity of existence.[14]

This potential strategy could be considered a sort of ethical promise to the field of aesthetics – one that is highly tactical, calling for a reworking of the systematic values of the dominating design paradigm. Market-driven design production has been the dominant paradigm and has yet to be fully disrupted. Similar to various activist groups, designers will need to retheorize power to move into any form of design activism, which will need to be a cultural response. Foucault's "aesthetics of existence" has been used tactically by marginalized groups such as feminists and civil rights and queer culture activists, but within the discipline of design it has only been used tangentially with regard to environmental or sustainability issues. Foucault's work can inform the processes of design production, governance, and ethical responsibility; the "Foucault effect" is arguably already beginning to affect the design community, encouraging a new field of design activism.

Deep ecologists: aesthetics and activism

> Who thinks today about future generations? Who is concerned about what people will eat, drink, and breathe in one hundred years, where they will get energy when there are twice as many people living on this planet as today? Only an idealist, a dreamer, a genuinely spiritual person who, they say, is not modern enough.
>
> These dreamers, who are often at the margin of society, will find their way to the place they belong, among the politicians, only if the very spirit of politics changes towards a deeper responsibility for the world.[15]

Havel wrote that we have become "blind … to perpetual economic growth and never ending consumption, no matter how detrimental to the environment, the dictates of materialism, consumerism, and advertising, the voiding of human uniqueness and its replacement by uniformity."[16] He and many others have provided important historical insights about reexamining the dominating paradigm, which equates technological advancement with economic prowess. Science and technology were initially considered ideal models for the pursuit of human betterment: innovation, capitalist practices, and the birth of the market-driven design paradigm at one time seemed immutable.

When discourse about the environment began to be linked with political and social change in the early 1960s, Thomas Kuhn and others began to question the mechanics of the scientific paradigm.[17] By the early 1970s, the environmental movement had gained momentum. Comparisons can be drawn between Arne Naess's philosophical work, "The Shallow and the Deep, Long-Range Ecology Movement: A Summary," and the work of Victor Papanek, an educator, UNESCO designer, and author of *Design for the Real World: Human Ecology and Social Change*.[18] Both authors attempted to elevate discussions regarding ecology and social change. Naess was noted for identifying and deconstructing the symptoms and causes of the environmental movement. Specifically, he used the term "shallow" to describe immediate issues, such as the fight against pollution and resource depletion, and used the term "deep" to describe the philosophical interactions between the social and the human within the environmental crisis. Essentially, he called for a more holistic modality.

The introduction of the Deep Ecology movement ignited proactive radical change. Specifically, it launched an active discourse about the "dominant worldview." Deep Ecologists identified individuals/corporations who were causing environmental destruction and held them responsible. At its essence was the need to change; by recognizing that individuals need to change, a holistic view of the environment seemed to naturally evolve into various forms of political activism. The Deep Ecology framework began to provide a link between ecology and ecophilosophy. Naess believed that

linking ecological and ethical concerns with scientific and aesthetic understandings could encourage a new modality of philosophical thinking to emerge. The writings of Naess and others (Devall and Sessions, for example) became immensely popular among political activists, artists, and scientists.[19]

Key to the Deep Ecology movement was its discussion of ethics and how they relate to political concerns. Deep Ecologists challenged traditional philosophical distinctions between individuals and nature, and their positioning of ethics and aesthetics allowed value and beauty to enter into the discussion. Deep Ecologists adopted some methodologies used in the arts (poetry, narrative form) as a way to encourage individuals to make radical shifts in their worldviews. The following excerpt illustrates how the dominant worldview of perception and evaluation developed and how they are not considered valid within the Deep Ecology framework:

> Confrontations between developers and conservers reveal difficulties in experiencing what is real. What a conservationist sees and experiences as reality, the developer typically does not see – and vice versa. A conservationist sees and experiences a forest as a unity, a gestalt, and when speaking of the heart of the forest, he or she does not speak about the geometrical center. A developer see quantities of trees and argues that a road through the forest covers very few square kilometers compared to the whole area of trees, so why make so much fuss? And if the conservers insist, he will propose that the road does not touch the center of the forest. The heart is saved, he may think. The difference between the antagonists is one rather of ontology than of ethics… . To the conservationist, the developer seems to suffer from a radical blindness. But one's ethics in environmental questions are based largely on how one sees reality.[20]

The Deep Ecology movement was unique because it propelled activist thinking. Its approach to ecological issues provided an understandable methodology: it incorporated philosophical and political components and

used a philosophical approach to legitimize a form of activism. The Deep Ecology movement was criticized, however, for various reasons: the tactics of activists, the diverse sources used for philosophical inspiration, and the fact that it was mainly pursued by Western environmentalists and would not help mitigate environmental concerns in underdeveloped countries. Still, its approach can help emerging designers who are interested in linking ethics with aesthetics. The development of the Deep Ecology movement is an important historical process to consider when questioning ethical protocols and practice; its theoretical and practical approaches could become part of a new theoretical framework for design ethics and design activism.

Contextualizing design activism

At the beginning of the twenty-first century, a new paradigm of design began to emerge, embracing social justice and community engagement. This would later become formally known as design activism. Design activism is an under-researched topic; few studies have investigated crossover activities between design and advocacy/activism, and fewer still have analyzed the extent to which design activists have been able to reorient ethical design protocols within local, national, and/or global communities. Design activism is rarely included in design curricula, even while universities across the globe are attempting to expand their civic engagement protocols. Additionally, very little research and content is available about teaching design activism in higher learning institutions. Educators and practitioners cannot work effectively without guidelines and tools related to design activism. Because universities are increasing their emphasis on experiential and service learning in their mission statements, determining how to use design activism to its fullest potential across the design field and in design education is a particularly timely objective.[21]

Papanek's book, *Design for the Real World: Human Ecology and Social Change*, established him as one of the earliest known activist designers who advocated for socially responsible design and who used a non-Western approach to design practice.[22] Since his seminal work, several

design practitioners and scholars have attempted to classify different types of design activism.[23] Some practitioners in the field of design activism have focused on practice motivated by a cause or event and types of pro bono projects.[24] Others have focused on the results of globalization.[25] Also of importance is the work of designers who have been engaged in developing design solutions within the context of the global social justice movement. Lacking any shared critical language or historic documentation, these designers found themselves having to create a new form of practice. For example, the advocacy design work of the AIDS Coalition to Unleash Power, with its cleverly designed slogan and image, *Silence = Death* (a pink triangle on a black background), pre-dated contemporary design activism mechanisms and is historically significant because it employed the tactics of earlier activists.[26] By 2007, initial evidence of this new design practice could be seen in the precedent-setting exhibition entitled *Design for the Other 90%*, which took place at the Cooper Hewitt National Design Museum, Smithsonian Institution.[27] The theme of the show was global population problems such as accessing food, clean water, and shelter. The exhibition included more than thirty projects by designers, academics, and social entrepreneurs who had designed low-cost solutions for underprivileged populations. The exhibition and subsequent provision of pro bono design services by not-for-profit organizations (such as Architecture for Humanity and Design Corps) demonstrated that design practitioners were starting to leave the protected confines of the traditional design studio.

There is clear evidence that design practitioners and educators are moving beyond the traditional logic of design practice, which tended to overlook issues related to activism and social responsibility.[28] The current logic of design activism is highly relevant and well-reasoned within the context of twenty-first-century design practice. Fifty years have passed since the social activism of the 1960s and 1970s gave birth to widespread consciousness about the urban condition. Today, design practitioners in general, and in particular their cohort of educators, are productive, critical, and have proven their willingness and capacity to embrace contradictions. They have also demonstrated a readiness to take on socially responsible

design. They appear to be reclaiming design activism in new and exciting ways. Untethered by fixed notions of practice, the long-term vision is strong and the work is very important. However, current documentation of this kind of work is limited to discussion of individual projects by practitioners and does not offer guidance to educators in the field of design or its organizing professional bodies, nor does it address contemporary knowledge mobilization techniques, such as those of Foucault or Naess.

The end of design, or an attitudinal paradigm shift?

Is this the end of design? How could one begin to answer this question? It might be helpful to go back to the dominating design paradigm of the twentieth century. Design has been historically linked to technology and capitalism and the practice of "planned obsolescence."[29] Designers, like artists, have embraced aesthetics as one part of the creative process, often modeling creativity using metaphor (e.g., the "machine").[30] Antoniades wrote, "There is a certain romanticism in approaching architectural creativity through metaphor."[31] He noted that the practice of some designers, in this case architects, was inspired by Nietzsche's *Zarathustra*. They interpreted Nietzsche's philosophy into design, and were essentially "among the first to impose on the world a superhuman vision, to remind the viewer of the greatness of the universe in contrast to the 'smallness' of humanity."[32] Antoniades continued, "It comes as no surprise, then, to learn that metaphor has been favored by architects who have domineering personalities and who perhaps find inspiration, and justification for their dreams in superhuman and often 'out of scale' metaphors."[33]

The attitudinal paradigm shifts dominating contemporary design discourse today no longer refer to the "smallness of humanity" – they call for a radical dismounting of "expert knowledge" and for the end of the "superhuman." Designers in the twenty-first century are struggling to identify themselves as partners in humanity. The questions that need to be

answered are predominately related to the areas of ethics and justice (e.g., social-economic and cultural). Can the designer strive for simultaneous action including aesthetics and ethics in design learning and practice? Should the designer choose ethics over aesthetics? Have we entered a design crisis? Can we declare the end of design?

This discussion has attempted to integrate philosophical ideas of ethics of care and aesthetics into design practice. A breach of trust has occurred within the design community, and the themes explored here – responsibility and duty, applied environmental ethics, social justice theory – generated questions about the need for a new discipline. To prevent the end of design, institutions of higher learning and the design profession require radical reordering. "Metaphorical" practices need to end, and the redirection of design practice needs to move toward design activism. Interior architectural design theory and practice is a young field and is still evolving – it is in a generative form of "becoming." The next wave of design pedagogy and practice may manifest as an ethical-aesthetic field that incorporates an ethics of care.

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Chapter 45

Beyond the visible

Skillsets for future interior architecture practice

Caryn Brause

In the coming years, interior architecture has the potential to occupy the very center of architectural design practice. As a proportion of all dollars spent within the construction market, the sector of "alterations" has risen to new heights during the last decade. This trend is projected to continue as demographics and other factors, such as commercial vacancy and an increasingly mobile workforce, lead the industry to devote less market share to new construction and more to renovating existing facilities.[1] In a future likely characterized by increasing resource scarcity, finding the most appropriate solution to a given design problem may mean favoring an inventive reimagining of current infrastructures rather than a focus on new construction.[2] Claiming this central role in an altered practice will require interior architecture practitioners to develop new attitudes and analytical skillsets for future success.

To address the realities of this future practice, the field of interior architecture must attend to more than the visible, physical surfaces that we can see and touch; rather, it must advocate spatial intelligence as one of its core professional services. This spatial intelligence enables practitioners to first assess existing building stock for both immediate programmatic potential and "next use," and then apply tactics that foreground flexibility and adaptability. This chapter examines the value of spatial intelligence in light of emerging conditions and suggests material strategies that can be applied to future practice (such as reconfigurability, modularity, and planning to accommodate future renovations) and designing to enable ongoing personal customization.

Beyond the visible

An interest in the material and tactile aspects of the interior environment draws many to the design professions. It is appropriate – and quite likely, essential – that students and practitioners alike find opportunities to exercise the design muscles necessary to create meaningful, expressive, and tangible products of design. However, the forces aligning to shape the future of practice demand that designers cultivate an additional, if more difficult to describe, set of skills in order to produce design products and services that venture beyond the visible, grouped here under the term "spatial intelligence."

Experienced designers – particularly those who work routinely with existing buildings, landscapes, and infrastructures – rely instinctively on spatial intelligence in making many of their design decisions. Several discrete qualities of this approach can be isolated, however, for closer examination. The first relates to identifying design solutions that privilege the spatial over the overtly tactile. The second involves applying systemic rather than material solutions, often achieved by looking beyond disciplinary boundaries to an expanded field of services. The third foregrounds planning for changes in spatial use over time.

Identifying solutions that privilege the deployment of spatial intelligence directly embraces resource scarcity as a creative challenge. Adopting this approach does not necessarily mean, however, that a design solution has no physical components or material implications. In an article published in *Library Journal*, Traci Lesneski, principal and head of the interiors division at MS&R, describes a series of granular interventions the Minneapolis-based firm made at area public libraries to help them keep pace with changes in programmatic use. The firm has worked with many branch libraries to shift the building type from an inwardly focused repository of physical materials to an active, people-centric grouping of spaces including collaborative work areas, technology zones, maker-spaces, and places for contemplation. For Lesneski, this means the firm's designers must think "beyond mere surface decoration" and focus on the client's goals for user experience.[3] In several of the renovations, this has meant that the designers achieved their greatest impact by clarifying and organizing space as opposed to purchasing expensive new furnishings.[4] For example, at the Dakota County Wescott Library, the designers removed tall shelves and other accretions at the entrance to improve navigation, restore sightlines through the building, and optimize flow. At the Louisville Free Library's Newburg Branch, the designers reorganized shelving to work with – rather than against – the orientation of daylight and exterior views and to create niches for reading. Lesneski notes that improving the function of an existing space "may require nothing more than a fresh eye and elbow grease."[5] Developing this mindset positions designers to repurpose existing material resources for the greatest spatial impact.

Relying on systemic or organizational tactics rather than material solutions may mean utilizing strategies that run counter to design culture from the standpoint of economics and expertise. Architecture 00's proposal for a reconfiguration of the Notre Dame RC Girls' Secondary School offers a case in point. The client approached the London-based architects because their corridors were overcrowded. Rather than propose an expensive building renovation, the designers recommended that the school relieve congestion by retiming the bell system that controlled student movement

throughout the halls. This dramatically reduced the project budget and simultaneously eliminated the need for traditional design services.[6] 00's Alastar Parvin declares his firm's approach radical:

> What kind of designer would actually propose that? We've inherited from the twentieth century this idea that the designer is someone who sells you an object whether it's a building or a consumer product… . What's exciting, of course, is that we're not just thinking about school bells – we're thinking about the whole operating system. How as a society are we going to succeed economically, technologically, and socially in the twenty-first century? And who's going to design the architecture of that operating system?[7]

Figure 45.1 Dakota County Wescott Library

Image credit: Brandon Stengel

For future interior architecture practitioners, adopting an approach that considers "the whole operating system" will entail looking beyond traditional disciplinary boundaries to offer an expanded field of services.

In addition to resolving the immediate problems at hand, spatial intelligence can be used to effectively influence the life of a space over time. In their competition entry to renovate the Van Alen Institute in New York City, EFGH-NY proposed three mobile components capable of rapidly yet radically transforming the space to serve various programmatic needs. Named the "Media Wedge," the "Bleacher," and the "Hinge Table," these dynamic elements simultaneously perform as architecture (to define the space) and as furnishings (to provide seating, work surfaces, storage, and display). The designers located the mobile elements within an edited spatial envelope, adding a durable floor to withstand the ongoing repositioning of elements, and a "smart" ceiling to house the infrastructure necessary to support such flexibility. Entitled *All of the Above*, the proposal provides reconfigurable space to accommodate a long list of programs, from public exhibitions, performances, and forums to daily operations. The proposal encouraged staff members to experiment with different layouts over time as their needs changed, embracing occupant-enabled reconfigurability and demonstrating an openness to "designing for future unknowns."[8]

Reconfigurability, planning to accommodate future renovations, and designing for ongoing occupant customization are not new to the practice of architecture; rather, current economic, environmental, technological, and social conditions demand that these "flexible" strategies receive renewed consideration. Already layered and deployed in new combinations, they are contributing, in aggregate, to an emerging interior architecture ethos.

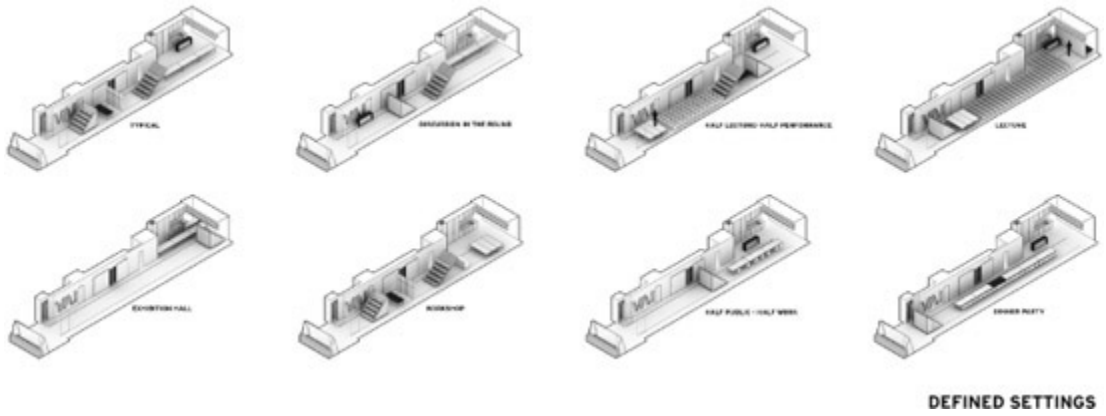

Figure 45.2 Van Alen Institute Proposal: *All of the Above*

Image credit: EFGH, Hayley Eber and Frank Gesualdi

Reconfigurability

As a material strategy, reconfigurability considers space mutable rather than fixed and anticipates its use over time in a multifaceted and programmatically layered manner. Reconfigurable designs enable us to use less space while meeting multiple programmatic needs. Frequently applied in dense, high-priced urban areas, this strategy has many well-publicized examples. MKCA's Unfolding Apartment, for example, compresses the functional elements of living, working, sleeping, dressing, entertaining, cooking, dining, and bathing into a 400-square-foot space in Manhattan through the use of an oversize cabinetry piece packed with the apartment's functional components.[9] Gary Chang's Hong Kong apartment squeezes twenty-four "rooms" into a mere 344 square feet by combining cabinetry mounted on low-tech rails with smartphone-controlled curtains.[10] Most often custom fabricated, the sliding panels and pivoting cabinetry of these handcrafted interiors enable domestic space to expand and contract at the occupant's will.

Modularity

In contrast to these bespoke residential projects, reconfigurability in commercial interiors has led to an increasingly generic office landscape composed largely of modular furniture systems. The original intent of these systems was something very different. The Action Office, instigated by Robert Propst, President of Herman Miller Research Corporation, and designed by George Nelson in 1964, aimed to keep pace with the exponential rate of change characteristic of modern work life, particularly the increased volume of information employees were required to process.[11] Propst's second iteration, Action Office II, employed a modular system but utilized freestanding vertical partitions connected at 120-degree angles, capable of forming complex trapezoidal spaces. From these panels, work surfaces and filing systems could be hung in diverse configurations. Propst's multidisciplinary research led him to conclude that changing work modes required a new office landscape to support employees in their productivity. That new landscape replaced the rows of traditional desks in a large, open bullpen with discrete yet flexible spaces that provided workers with greater degrees of privacy and personal choice.

"One of the regrettable conditions in present offices," Propst wrote in his 1968 manifesto, *The Office: A Facility Based on Change*, "is the tendency to provide a formula kind of sameness for everyone. It takes a serious organizational rebel to overcome this institutionalized expression."[12] Propst's chosen method for overcoming "sameness" was ongoing individual customization. His Action Office II used preplanning tools and computer simulation to assess workers' needs and initially configure workspaces. Components and configurations could be changed gracefully, with minimal disruption, as tasks changed. Employees could, for example, raise or lower their desks throughout the day, depending on whether they chose to sit or stand.

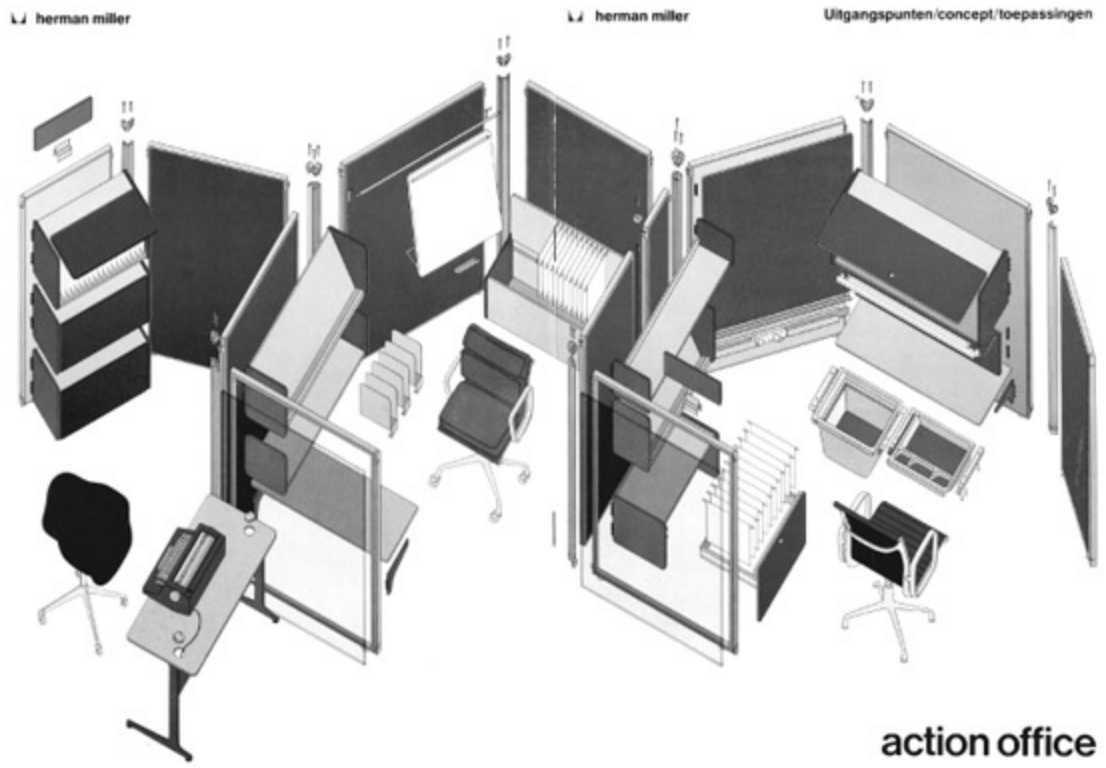

Figure 45.3 Action Office Illustration

Image credit: Courtesy of the Herman Miller Archives

Although designed for ongoing customization, the components of the Action Office II were seldom – if ever – actually changed. Eventually, commercial real estate economics rationalized Propst's free-flowing design, with its movable partitions and adjustable parts, into the now ubiquitous and universally reviled 36-square-foot cubicle.[13] However, recent studies of employee productivity and innovation have prompted a rehabilitation of Propst's principles.[14] In the commercial office sector, manufacturers are creating new systems that exploit the movement and flexibility Propst initially proposed. Herman Miller advertises its Living Office System as a "spatial recipe that considers the optimal arrangement of surroundings, tools, and furnishings": the pieces can be positioned in ten distinct settings to "provide choice and foster community."[15] Other systems, such as Steelcase's Vertical Intelligent Architecture (V.I.A.), stretch beyond furnishings to include flexible partitions, while DIRTT's modular,

customizable, prefabricated interiors enable occupants to rearrange interior structures, swap out materials, and evolve their infrastructure over time. Systems like these revisit Propst's original intentions, mining the fertile ground of modularity to provide experiential and technological flexibility.

Planning to accommodate future renovations

In *The Office*, Propst also outlines "new rules" for the workplace, starting with the guiding principle that facilities be "forgiving." Perfectly planned facilities "in which we all live happily ever after" did not exist for the author; this led the realist to mandate that designs be adaptable to contemporary organizational life, in all its complexity.[16] Propst's mandate is expandable and scalable from that of the interior to the building – and even the city; in projects by contemporary practitioners where these concepts are applied in response to emerging economic and environmental conditions, we can see Propst's realistic outlook and his thinking about adaptability resonating at a variety of scales. For example, Gensler's Hack-able Buildings/Hack-able Cities initiative examines the forces that are dramatically changing the quantity and quality of desirable workspace within urban districts. Advances in technology, such as portable devices, cloud-based computing, and enhanced virtual collaboration tools have transformed a once static office workforce into a dynamic one. Companies wishing to capitalize on this mobility encourage employees to work (at least part of the time) from alternative sites within the city. In terms of office space, this has allowed them to allocate less square footage per person; this has increased workplace density and is, ultimately, creating greater overall commercial vacancy.[17] Rather than demolish newly vacant building stock, the Gensler project proposes "hacking" it – that is, harvesting it so as to retain its embodied energy while repurposing it to serve the new and diverse needs of a future workforce.[18]

Shawn Gehle, principal and design director of Gensler's Los Angeles office, identifies "hackability" at numerous scales. Macrolevel hackability "works at the building level, adapting existing buildings through

a series of project-based interventions."[19] The firm demonstrated this approach in their entry for the 2012 "Future of the Office Building" competition, which provocatively hacked Washington, DC's FBI headquarters.[20] It subsequently tested a macrolevel hack on its own offices with interventions to its 1970s-era Bank of America building.[21] Gensler now designs office buildings with this future hackability in mind. Their design for the 524,000-square-foot Tysons Tower situated structural columns along the outer perimeter and inner core, leaving the floor plates structure-free and highly flexible.[22] One of the building's first tenants, Intelsat, exploited the building's built-in hackability by punching holes through seven floors, creating a vertical circulation core that unified its eight-story offices.[23]

Planning for ongoing occupant customization

Gensler's research also identifies microlevel hackability, defined as "providing the users the instruments to tailor space to their needs and desires on demand."[24] This approach was informed by the firm's 2013 U.S. Workplace study, which found that employees who have a choice about when and in which types of environments they may work reported being more satisfied with, and more effective at, their jobs.[25] The firm recommends that clients provide employees with choices by aligning tools, policies, and work environments. It tested this approach in its 605,000-square-foot office renovation for Motorola Mobility, which encourages the company's 2,400 employees to individually modify the space through a number of infrastructural design moves. Electrical outlets and data ports located in the floor, for instance, allow adjustable-height, mobile workstations to be repositioned freely. Linear light fixtures installed on the diagonal, rather than in a rectilinear ceiling grid, leave furniture placement open.[26] Even some of the artwork is mounted on magnetic strips to encourage ongoing rearrangement.

Gensler's notion of microlevel hackability closely accords with Propst's earlier recommendation that control over the work environment be

placed directly in the hands of workers.[27] By giving employees the tools and freedom to plan and implement their own preferences, they would produce physical spaces conducive to stimulating, meaningful, and relevant work. Within this positive social climate, Propst believed, employees will form "an organic community of individuals working with a tangible sense of belonging and useful contribution."[28]

New rules for a new era

With fifty years of hindsight, reflection, and continued research behind us, the potential benefit of Propst's rules for creating flexible, "forgiving" spaces might be fruitfully redeployed today. Changes in worker mobility, coupled with an aging, increasingly vacant building stock and a growing concern for conserving material resources, are giving rise to projects that resonate with the spirit of Propst's thinking, research and design work. How can we further consider Probst's body of work to identify new "rules" for a future interiors practice?

In order to do so, we need to separate his ideas and their intentions from their unfortunate implementation – the cubicle.[29] First, we must acknowledge Probst's contribution as a designer-researcher. He not only observed workers firsthand but also consulted with mathematicians, behavioral psychologists, and anthropologists about the work place. His interdisciplinary methodology produced qualitative as well as quantitative insights into occupant needs and performance; he took questions that were being asked by social scientists and management consultants and uniquely sought to answer them through design.[30] Today, pre- and post-occupancy studies similarly provide data on productivity by isolating effective characteristics of the workplace: emerging tools that verify actual (rather than reported) space usage and employee behavior will no doubt yield more, and increasingly granular, data for designers to employ.[31]

To make Propst relevant for today, we must also assess conditions that have changed since he conducted his research. When he introduced the Action Office II, the workplace was a singular physical space. Now, workers'

increasing mobility, which needs to be accommodated in an ever-widening number of settings, requires a reexamination of the workplace in its dispersed configuration. As companies across all sectors increasingly leverage this mobility to move underutilized square footage off their balance sheet, the divide between spatial types will become increasingly blurred. Designers will need to employ their spatial expertise to equip the workplace in a way that satisfies diverse uses within a stripped-down footprint. At the same time, when designing other spatial types, they will need to be mindful that this "workplace" is now dispersed throughout an urban district, situated in offices *and* homes *and* neighborhood coffee shops *and* communal public spaces. As designers grapple with this programmatic simultaneity, we might telegraph Propst's call for "forgiving" spaces.

Next, we must reconsider the underlying ethos behind Propst's research, which was largely concerned with workforce productivity. Current corporate interiors projects continue to apply Propst's theories through a lens focused on the economic ramifications of employee satisfaction and engagement. However, more contemporary researchers are studying workers holistically to address their physical, cognitive, and psychological well-being.[32] Moreover, emerging economic, environmental, and social imperatives involving the reuse of buildings, landscapes, and infrastructures offer additional rationales for the reconsideration of his theories. These lenses position design as an environmental act; by creating spaces that are more personal, satisfying, and multifunctional, we obviate the need to build more.

Gensler Principal Peter Weingarten directly addresses the tension faced by designers when creating workspaces as armatures for occupant expression and customization. In his experience, designing a workplace geared toward the values of the millennial workforce, such as Facebook's one-million-square-foot-plus campus, requires the ability to "resist the impulse to be overly curatorial, a shift in itself for many designers who have been so trained to consider the smallest details in the most retentive manner."[33] Propst considered this same tension when he widened his lens to apply his principles to sectors beyond the office. In "Human Needs and

Working Places," he considers knowledge-based institutions where "members of a better-educated, more participatory society" expect to have a voice in shaping their environments. Addressing educators and school administrators, he asks "unexpected and disturbing" questions, such as "Can we let students and educators possess schools? Can we let office workers and administrators possess offices? Are we not afraid that people, unpredictable, tasteless, immoderate, chaotic, will be corrupters of public places?"[34]

Propst optimistically answers by suggesting that when we enable the public to participate in shaping their environment, this fosters more meaningful involvement with work, with learning, and with personal growth. From this viewpoint, we might rehabilitate Propst's broader vision of creating design frameworks that empower occupants to engage their environments cognitively and materially.[35] By moving these theories out of the corporate sector and into the larger civic landscape, we may adopt spatial approaches that have the capacity to tolerate, and even thrive on, the unpredictability of "future unknowns."[36] Adopting these approaches calls upon future designers to assume a role that shifts from design control to user empowerment. By engaging the intelligences of others and by marshalling their own essential spatial intelligence, they will create an open-source landscape, supportive of a participatory society.

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32 For example, the Gallup organization measures global well-being by polling adults about five interrelated and interdependent elements of their lives: career, social, financial, community, and physical well-being. Their research indicates that the relationship between engagement at work and well-being across these dimensions flows in both directions. Tom Rath and Jim Harter, "The Five Essential Elements of Wellbeing", *Business Journal* (4 May 2010), www.gallup.com/businessjournal/126884/five-essential-elements-wellbeing.aspx.

33 Peter Weingarten, "Workplace Transformation: How Human Capital Is Impacting Investment in Real Estate", National Association of Real Estate Investment Managers, 27 February 2015, www.nareim.org/viewpoints/workplace-transformation-how-human-capital-is-impacting-investment-in-real-estate/.

34 Propst uses the term "possessable" to describe occupant engagement with their environment. Robert Propst, "Human Needs and Working Places", *The School Review* 82, no. 4 (1 August 1974): 611.

35 Ibid., p. 610.

36 A subsequent essay by the author will address Propst's work beyond the corporate sector and its relationship to future practice.

Part nine

Geographies

Chapter 46

Interiors as global constructs

Framing culture and design discourses in a world of movement

Tasoulla Hadjiyanni

At a time when ideas, people, and products move around the globe at unprecedented speeds and scales, interior architecture theory is called on to explore questions and practices that extend beyond the comfortable and the familiar. Instead, they allow for the exposure of "differences" and "biases," translating into mediums for dialogues around the role of design in processes that can create marginalization and inequality. Exploring how interiors inform life in a world of movement adds new layers to our understanding of what it means to be human and complicates the questions scholars and designers need to be asking. In what ways does movement change the human experience of space and place? How are interiors impacting meaning-making processes? What are the implications of this understanding for theory development and how it can translate to education, policy, and practice? Answering these questions takes an interdisciplinary approach, one where design-related discourses are fused

with knowledge from fields such as anthropology, sociology, philosophy, psychology, geography, and gender/ethnic studies.

Globalization discourses are tied to interiors in ways that are much more complex and difficult to untangle than those dictated by the present scholarship on design and culture. Migration, displacement, transnationalism, and multiculturalism create an urgent call to action that is partly linked to current inequalities experienced by those whose lives are enmeshed in political, economic, and social systems that often conflict with and negate one another. My research with refugees, new immigrants, and minority populations brought to the forefront the constraints faced by many in creating a supportive home environment, one where individuals and families can practice cherished traditions, from cooking favorite foods to hosting friends and relatives and passing down to the next generation long-standing religious rituals (Figure 46.1).[1] Coming from lower socioeconomic strata and lacking English proficiency, many new immigrants to the United States are often limited to menial and low-paying jobs. Over one-third of all Mexicans, for example, have incomes that fall below the poverty level, compared to 13% of the total United States' population, which can limit their choices of where and how to live.[2]

Income inequality is accompanied by health disparities. The example of Minnesota, one of the healthiest states in the nation, illustrates this point. The state faces some of the greatest disparities in health status and incidence of chronic disease between populations of color and whites.[3] Health disparities have been linked to a host of factors, including housing conditions and access to healthy foods. As projections show that in 2040 almost half of Minnesota's population is expected to be people of color (and close to half of the growth in the state's population is expected to come from international immigrants), the need to delve deeper into exploring the intersections of design and culture has never been more crucial.[4]

In this global era, the question that confronts us is not whether interiors matter but *how* they matter. Interiors' fluid character manifests itself as a social, economic, cultural, or political construct that changes and evolves in response to fluctuating borders, a multiplicity of identities, and

varying layers of sense of belonging. Interiors can be positioned as what Stuart Hall calls "a form of representation which is able to constitute us as new kinds of subjects, and thereby enable us to discover places from which to speak."[5] From within this theorization, Mexican traditional patterns, colors, and motifs that adorn interior walls become an opportunity for dialogues around the process by which a color palette came to be associated with Mexicans – and the implications of that association (Figure 46.2). Designs that allow room for questioning how a group is defined move away from the paradigm of "culture" as static and isolated, provide a forum for the sociopolitical context in which "culture" is constructed to emerge, and allow issues such as colonization, globalization, immigration, and power differentials to come to the surface.[6] I have called this line of work Culturally Sensitive Design (CSD), design that is characterized by flexibility and adaptability and that recognizes the multiplicity of ways by which people construct meaning in life.

Figure 46.1 Poor ventilation limited a Hmong family's ability to cook traditional foods that generate smells

Figure 46.2 A Mexican immigrant reconstructs home through cultural interventions

When it comes to theorizing the conundrum of how culture and design relate in a world of movement, objectives can vary along what can be divergent lines: from simplistic ones, such as those that conceive of interiors as place and time-bound, to ones where interiors are not constructed only

out of immediate, visible, physical context and characteristics but as global constructs; where notions such as culture, identity, race, history, gender, and otherness are negotiated and produced. Conceiving of interiors as global constructs allows room for considering the multiplicity of constraints by which culture can play out in the global era. As noted by Warnier, "Being a subject is not primarily being what one chooses to be, but constructing one's drives in a material world and gaining access to the moral law in one's relationship to others, under a number of constraints."[7] Theories on interiors must provide frameworks through which scholars, practitioners, students, and policy makers can navigate an interconnected global reality and feel competent and secure enough to identify problems and their consequences, as well as be empowered to take responsibility or action.

In this chapter, I draw from my experience with CSD and propose that the design implications of movement will never be fully understood unless theorizations of interiors broaden understandings of how design and culture intersect, allow for a renewed sense of responsibility on the part of designers, and expand the foci of design. As lenses that inform the direction of dialogues and debates, these theories empower designers to complicate the questions they are asking, better preparing them to address the challenges posed by the cultural complexities of the twenty-first century.

How do culture and design relate?

Fields such as anthropology and sociology have long struggled with defining culture and how it should be understood. Early attempts saw *culture* as an "essence," and scholars focused on exploring the "integrated system of learned behavior patterns which are characteristic of the members of a society."[8] Essentialists argued that there is truly something "authentic" about each culture, and this something is tangible and identifiable, made up of separate and distinct elements. Interiors, along with food, dress, religion, social relations, music, dance, etc. were mediums through which to understand, and in turn, relate diverse ways of living. Overall form, spatial layouts, decorative patterns, activities supported, size of spaces, lighting

levels, material choices, construction techniques, and symbolic meanings were aspects of interiors that shone a light on "difference."

In contrast, constructivists point to such conceptions of culture as static and monolithic, ones that do not capture the complex, multidimensional, hybrid, dynamic, intertwining, and ever-changing facets of culture that characterize border crossings and modernization processes.[9] In *Culture & Truth*, Renato Rosaldo calls for shifting discourses from defining culture to understanding how culture is constructed and produced.[10] Moving from the singular to the plural, and from the static to the dynamic, acknowledges the many ways to belong – the multiple lenses from which one can choose to view the world. Gupta and Ferguson situate these explorations in context and argue for the importance of "exploring the processes of *production* of difference in a world of culturally, socially, and economically interconnected and independent spaces."[11] Deciphering how interior spatialities relate to race, gender, and class power dynamics dissolves obscurity around the production of inequality and marginalization.

Part of the challenge to anyone embarking on this journey is navigating two dominant narratives: assimilation versus resistance, and everything in between. The *assimilation* narrative operates on the premise that soon enough, defining elements of new immigrants' cultural identities such as language, religion, and food will blend into the American melting pot. Investing in research and understanding of differences is not a worthwhile endeavor. In contrast, the *resistance* paradigm draws energy from such facts as the over 62 million people in the U.S. who speak a language other than English at home.[12] This scenario conceives of homes as sites of resistance from mainstream values and ideals; private spatialities that enable immigrants and minorities to retain and nourish their sense of difference and construct a transnational identity.[13]

The bottom line is that theorizations that account for plurality, the multiplicity of ways by which an individual or a collective can belong, matter. Purposeful theories are not crafted in vain; they impact lives and well-being as well as the choice of who one can become. People have agency and choose which aspects of their lives to change and how. In many cases,

though, choices can be bounded by limitations brought forward by the built environment, and people may find themselves without the choice to appropriate their homes to support their way of life, facing undue stress and feelings of disconnect.[14] Theories that build on the dynamic nature of culture can translate into retail interiors that boost wide aisles to accommodate large, extended families with children and elders; affordable housing that uses materials that can withstand mold and moisture in bathrooms and, therefore, are conducive to the washing ritual of devoted Muslim residents who cleanse before their daily prayers; and public libraries that include signs in diverse languages to attract and relate to a diverse population.

In policymaking, such theorizations can prompt mayors, lawmakers, and advocates to debate around how to develop decision-making processes that include multiple voices and perspectives and how to foster and nourish the capabilities embedded in all community members. CSD is closely linked to the Capabilities Approach, aligning with a shift in policymaking that includes measures of quality of life for a nation's residents among the indexes of prosperity, rather than relying simply on economic indicators such as the GDP. As a social justice theory, the Capabilities Approach asks:

> What is each person able to do and to be? In other words, the approach takes each person as an end, asking not just about the total or average well-being but about the opportunities available to each person. It is focused on choice or freedom, holding that the crucial good societies should be promoting for their people is a set of opportunities, or substantial freedoms, which people then may or may not exercise in action: the choice is theirs.[15]

Moving beyond the "us" versus "them" framework, theorizations of global interiors recognize that everyone benefits when resources, improvements, and opportunities are spread throughout all areas of a region. This brings us to the next question of understanding the role of designers.

What is the role of designers?

Plunged into the murky waters of *difference* while teaching interior design studios on culturally sensitive housing, I confronted what seemed to be unanswerable questions: What is a designer to do when religion enters the picture in housing supported by federal funds in a secular country? How can one handle values that diverge from the ones adopted by the mainstream, such as women socializing separately from men? Should and could designers become health advocates, and what kind of training would that require? The lived experiences of my Hmong, Somali, Mexican, Ojibwe, and African American interviewees exposed the political and ideological deficiencies of current design theorizing. Translating Hall's call for "places from which to speak" into conceptual diagrams and programmatic guidelines for residential environments within an urban setting felt overwhelming to students with limited exposure to "otherness."[16] Theories that reposition the role of designers as central to the question of what it means to *be* can establish interiors as mediums for social justice and broaden the scope of interior design education and practice.

Writing over 2,300 years ago, Aristotle can pave the way for how to think about this topic. Aristotle understood happiness as an activity, in fact, the end of all activities. In Book I of *The Nicomachean Ethics*, he defined happiness as "a virtuous activity of the soul" and prompted all students of politics to study the soul.[17] Happiness is one of the sacred and unalienable rights noted in the Declaration of Independence. What can prompt designers of interiors to operate with happiness as a goal in mind? How would one study the soul and in what ways could those lessons infuse themselves in the design of interior spaces? Can interiors nudge people toward virtuous activities, ones that care for the soul, and if so, how? Who decides what is good and how could one know that something is virtuous?

Interiors have long been reified as spaces for varying activities, from nourishing one's body in a residential kitchen to forging collaborations in the workplace. Global interiors boost additional qualities. They are the sites from where global citizens transcend spatial and temporal boundaries,

putting in place a process through which their claims of interior spaces become performances that showcase their right to happiness. A global modality problematizes how interiors relate to happiness at a time when "everyone's problems are everyone else's."[18] Pico Iyer situates discourses on globalism within the notion of the soul – the global soul – "characterized by the fact of falling between all categories."[19] Such theorizations further broaden the questions designers can be asking: Whose soul are we talking about, and who might be left out? How are "categories" formed and sustained, and what role do interiors play in the process? What are the implications of "falling between" for interiors, which are fixed spatialities, bounded by walls, floors, and ceilings?

Appiah's *cosmopolitanism* brings forward two specific characteristics that are crucial in the formation of a "citizen of the world" and for anyone studying the soul: first, feeling an obligation to others, and second, taking interest in the lives of others and what gives those lives significance.[20] Theorizations around the role of designers in a world of movement must also encompass explorations of the characteristics that must be intentionally fostered for the creation of global interiors. Once again, the questions multiply: who is the "other"? What kind of skills and educational preparation would designers need to embark on this journey of understanding the "other"? How does one demonstrate "interest" and what are the ways by which this demonstrated interest can be supported and sustained?

Designers who recognize what it means to "fall between" consider the impact of the built environment on the construction of marginalization and difference – from the foods one can eat, to the relationships one can form, and aspirations for the future. As a result, designers of global interiors would benefit from theoretical frameworks that examine decision-making processes and who gets to sit around the table; they better understand how partnerships and synergies are fostered with others who share similar goals, consider how knowledge of diverse perspectives and needs is formed and disseminated, and question how design can be used to break down barriers

and stereotypes. From within this expanded role of designers, globalism implies responsibility for all – including those once invisible.

Who are the users of interiors?

Theorizations around interiors as global constructs must also reconsider the relationship between space and body. In much of design research, the body is equated with the user – the patient in the hospital, the student in the classroom, the employee in the workplace. How would designing interiors change if users included the non-visible, those living in the shadows, such as youth caught in trafficking or undocumented immigrants? What are the implications of design parameters such as surveillance, both physical and technological, for those who live on the margins of society? How can designers be exposed to the plight of the invisible, and in what ways can these experiences be used to rethink current pedagogies and practices?

Sexually exploited youth are not the type of user one would typically think about when talking about hotel and shopping mall interiors. A global industry of monumental proportions, trafficking operates by keeping victims on the move, across borders, states, neighborhoods, and buildings. An estimated 27 million people, mostly girls and women, are trafficked each year globally, and in Minnesota alone, close to 250 teens are sold an average of five times a day. Poverty, low educational attainment, community and interpersonal violence, high rates of alcohol-related deaths and suicide, poor physical health, and corroded family and community relationships, as well as the generational and historical trauma experienced by marginalized groups, are partly to blame.[21] Interiors associated with trafficking include places where youth are recruited (schools, malls), places where ads are posted online (coffee shops, local libraries), places used by purchasers to meet victims (houses, hotels, massage parlors, gas stations), and places where victims can transition (shelters, homeless youth centers) (Figure 46.3).[22]

The rights associated with citizenship are another notion that global interiors are called to interrogate. An estimated 12 million people

currently live in the United States without legal documentation, as many as half of whom are Mexicans. Often labeled “undocumented” or “illegal,” these immigrants experience additional challenges in finding a new place to call home and creating a sense of belonging. Much of their experience of interiors is informed by *absence*, not *presence*, as families are divided, loved ones are left behind. Reframing interiors from within the *absence* paradigm recognizes spaces as *transbodied*, and the body that dwells is partly informed by other bodies and experiences, some of which are at the same location (physically present) and others are apart (physically absent).[23]

Figure 46.3 The grandeur of malls hides their use by sex traffickers to recruit vulnerable youth

An expanded definition of users transforms interiors into vehicles for further problematizing narratives around difference. Scholarship that searches for connections between societal challenges and theoretical understandings can solidify the contributions of interior architecture to human well-being.

Unraveling the globality of interiors requires alternative means of knowing and engaging communities that designers have not always been

well practiced in. Stories that are not typically part of historical canon must be included in interrogations of how interiorities are constructed and endowed with meaning.[24] Globality in a world of movement implies theories that recognize social inequalities as partly spatially constructed through interiors, and therefore opportunities for intervention abound. Interiors that account for the junctures of body and mind, here and there, presence and absence, the visible and the invisible, can become spatialities endowed with complicated identities that are validated and spatially supported.

Notes

1 My cross-cultural study of differences in housing needs includes the experiences of Hmong, Somali, Mexicans, Native Americans, and African Americans. See examples of papers: Tasoulla Hadjiyanni, "Bounded Choices – Somali Women Constructing Difference in Minnesota Housing", *Journal of Interior Design* 32, no. 2 (2007): 17–27; Tasoulla Hadjiyanni, "Transbodied Spaces: The Home Experiences of Undocumented Mexicans in Minnesota", *Space and Culture* 18, no. 1 (2015): 81–97.

2 To begin to understand the adjustment issues faced by many new immigrants, see Nicholas De Genova, *Working the Boundaries: Race, Space, and "Illegality" in Mexican Chicago* (Durham, NC: Duke University Press, 2005); Alma Garcia, *The Mexican Americans* (Westport, CT: Greenwood Press, 2002).

3 Good starting points for those interested in health disparities are the following: Craig Helmstetter, Susan Brower and Andi Egbert, "The Unequal Distribution of Health in the Twin Cities", Amherst H. Wilder Foundation, Saint Paul, MN, October 2010, www.wilder.org/Wilder-Research/Publications/Studies/Health%20Inequities%20in%20the%20Twin%20Cities/The%20Unequal%20Distribution%20of%20Health%20in%20the%20Twin%20Cities%202010,%20Full%20Report.pdf (accessed 8 April 2012); "Priority Health Areas of the Eliminating Health Disparities Initiative", Minnesota Department of Health, http://www.health.state.mn.us/divs/che/ehdi/priority.html (accessed 13 September 2017).

4 "What Lies Ahead: Population, Household and Employment Forecasts to 2040", Metropolitan Council, Saint Paul, MN, April 2012,

www.minnpost.com/sites/default/files/attachments/MetroStats_Forecasts.pdf (accessed 8 April 2012).

5 Stuart Hall, "Cultural Identity and Diaspora", in *Identity: Community, Culture, Difference*, ed. Jonathan Rutherford (London: Lawrence & Wishart, 1990), p. 237. Hall's theoretical framework on how the cinema can position Black Caribbean identity can be employed to guide architectural and design responses to immigration and displacement.

6 An example of how to move in this direction can be found in Tasoulla Hadjiyanni and Kristin Helle, "Kitchens as Cultural Mediums – the Food Experiences of Mexican Immigrants in Minnesota", *Housing and Society Special Issue on Kitchens and Baths* 35, no. 2 (2008): 97–116.

7 Jean Pierre Warnier, "A Praxeological Approach to Subjectivation in a Material World", *Journal of Material Culture* 6, no. 1 (2001): 12.

8 E. Adamson Hoebel, *Anthropology: The Study of Man*, 4th ed. (New York: McGraw-Hill, 1972), p. 6.

9 Examples of writings that use a constructivist perspective and focus on the variable and dynamic nature of culture include Angelika Bammer, *Displacements – Cultural Identities in Question* (Indianapolis, IN: Indiana University Press, 1994); Andrew Shryock and Nabeel Abraham, "On Margins and Mainstreams", in *Arab Detroit – From Margin to Mainstream*, ed. Nabeel Abraham and Andrew Shryock (Detroit, MI: Wayne State University Press, 2000), pp. 15–35.

10 A seminal piece that broadens how culture is understood and approached is Renato Rosaldo's, *Culture & Truth – the Remaking of Social Analysis* (Boston, MA: Beacon Press, 1989).

11 Akhil Gupta and James Ferguson, "Beyond 'Culture': Space, Identity, and the Politics of Difference" *Cultural Anthropology* 7, no. 1 (1992): 14.

12 Language is one indicator of culture, ethnicity, and difference and in the U.S., 20.1% of 311,591,917 people speak a language other than English in the home. http://quickfacts.census.gov.

13 bell hooks and Amalia Mesa-Bains, *Homegrown: Engaged Cultural Criticisms* (Cambridge, MA: South End Press, 2006); see, for example: Hadjiyanni, "Transbodied Spaces", pp. 81–97; Setha Low and Denise Lawrence-Zúñiga, *The Anthropology of Space and Place: Locating Culture* (Malden, MA: Blackwell Publishers, 2003).

14 An example of the challenges faced by veiled Somali women can be found in Tasoulla Hadjiyanni, "Bounded Choices", pp. 17–27; for more on undocumented immigrants see Hadjiyanni, "Transbodied Spaces", pp. 81–97.

15 Martha Nussbaum, *Creating Capabilities: The Human Development Approach* (Cambridge, MA: Harvard University Press, 2011), p. 18.

16 Innovative pedagogies can be used to expose students to the complexity of cultural discourses. As an example, see Tasoulla Hadjiyanni, "Beginning With Concept – Deconstructing the Complexity of 'Culture' Through Art in Design Education", *International Journal of Education through Art* 10, no. 1 (2014): 23–39.

17 Aristotle, *The Nicomachean Ethics* (London: Oxford University Press, 1971), p. 18.

18 Pico Iyer, *The Global Soul: Jet Lag, Shopping Malls, and the Search for Home* (New York: Alfred A. Knopf, 2002), p. 34.

19 Ibid., *The Global Soul*, p. 23.

20 Kwame Anthony Appiah, *Cosmopolitanism: Ethics in a World of Strangers* (New York: W. W. Norton & Company, 2006).

21 The high numbers of Native American youth caught in trafficking are partly explained by these factors in Alexandra Pierce, "Shattered Hearts: The Commercial Sexual Exploitation of American Indian Women and Girls in Minnesota", *The Minnesota American Indian Women's Resource Center*, Minneapolis, MN, August 2009, www.indianlaw.org/sites/default/files/shattered%20hearts%20report.pdf (accessed 10 May 2015).

22 To learn more about the "placeness" of trafficking and how designers can be involved, see Tasoulla Hadjiyanni, Melanie Povlitzki, and Hannah Preble, "The Placeness of Sex Trafficking – Instilling Consciousness Through Minnesota's Experience", *Journal of Interior Design: Special Issue on Interior Design Collaboration* 39, no. 1 (2014): 1–16.

23 Hadjiyanni, "Transbodied Spaces", pp. 81–97.

24 Community-engaged scholarship and teaching are means to expand designers' awareness of what matters and why. See Mallika Bose, Paula Horrigan, Cheryl Doble, and Sigmund Shipp, *Community Matters: Service-Learning in Engaged Design and Planning* (New York: Routledge, 2014).

Chapter 47

Hearts and minds and dishwashers

Jodi Larson

In 1959, leaders of the Soviet Union and the United States, two world superpowers locked in a Cold War, held an informal debate. The debate is taught in history courses, written about by scholars, and was about the global policies and techno-politics of … the kitchen. Dubbed the "kitchen debate," this friendly pop-culture battle on the world stage was the culmination of decades of machinations that used the discipline of interior architecture as a means to debate not just modern living, but life as we know it. Interior architecture, often labeled a new discipline, was in fact the tool of choice in fighting for philosophical dominance in the Cold War. While design as a whole has always been key to social and political maneuvers, the post-WWII years focused specifically on the design of home interiorities and the layout of space and infrastructure in the domestic arena. It was interior architecture that was chosen as the way to the hearts and minds of Cold War participants. The "kitchen debate" did not became an iconic showdown of world power on its own. Reshaping the home and its interiors had been a constant theme throughout the twentieth century, with American Taylorism meeting German *Wohnkultur* (dwelling culture), and produced such results

as the Frankfurt Kitchen (1926).[1] After World War II, however, design collaboration became design competition.

By 1948, while Germany still struggled with consumption at the most basic levels of food and shelter, the U.S. State Department responded to Soviet propaganda in Germany against the "American way of life" with some counter propaganda of its own, emphasizing living standards and suggesting that Europe "try it our way." The Office of the Military Government in U.S. occupied Germany (OMGUS) busied itself with the planning of a design exposition of American housing trends. Opening in 1949 in Berlin, *So Wohnt Amerika* (How America Lives) presented eight scale models and 150 display panels featuring designs and photographs from architecture schools at Harvard, Columbia, and MIT (featuring, of course, designers and architects who had been heavily influenced by European design and institutions such as the Bauhaus).[2] As a series of Cold War crises erupted in the late 1940s around the Marshall Plan and the European Recovery Program, how America lived became a weapon in the war of domestic space.

Berlin was again the ground zero of these consumption wars in 1950 as the *America at Home* exhibit debuted at West Berlin's annual German Industrial Exhibition (and just as a national election was happening in East Berlin). Among other exhibits, a prefabricated suburban home shipped from Minneapolis was constructed by carpenters working around the clock. The resulting home, complete with carport, embodied the American promise that citizens benefitted more by supporting innovations than by pushing against them. John McCloy, the U.S. High Commissioner for Germany, responded to the exhibit by calling it a living monument. An internal government memo praised it as a "patriotic reaffirmation of our way of life" and a symbol of a "struggle as vital to the peace and prosperity of the world as any military campaign in history."[3]

A similar exhibition a few years later, at the 1952 German Industrial Exhibition, again pitted two political systems against one another by using interiorities. U.S. State Department documents clearly delineate "consumer goods designed to raise the standard of living" as the primary

directive of the unified display in order to have the maximum effect on the average East German visitors. The title chosen for that year was *We're Building a Better Life*. This optimistic statement echoed the East German productivity slogan of "Produce More – Live Better."[4] Each of these optimistic titles strove to convince the public that a certain political and economic system of household consumption and design was the right way to achieve a higher standard of living.

At some level, both industrial design and interior architecture were seen as a way to charm consumers into choosing which economic and political system to align with. Governmental policy, however, went even farther. In the United States, interior architecture was used to set official civil defense policy during the early decades of the Cold War. In 1951, the U.S government officially formed the Federal Civil Defense Administration (FCDA) in response to the Atomic Age. Immediately, this organization began to militarize the American home and the families that dwelled in them under the guise of anti-war safety. Civil defense planner John Bradley wrote a memo to his superiors that equated the possibility of a nuclear bombing to recent winter storms, asking "how self-sufficient would the average urban home be following as atomic attack?"[5] This simplistic view of an atomic attack paved the way for American homes to be judged and politicized as agents of patriotism and survival.

On that front, FCDA administrator Katherine Graham Howard also espoused a homeward-looking strategy and helped to develop official policy that centered on the nuclear family's own home and actions to survive a bombing attack. She helped to draft policy that, by 1954, led Americans to believe that keeping their own homes safe and then returning to those homes within a few days of a blast was the most effective way to maintain lives and society.[6] Perhaps the most repeated images of this campaign were those of the 1953 Operation Doorstep. Ostensibly to test structures and food products in the event of nuclear exposure, "Operation Doorstep" staged, in the Nevada desert, a family of mannequins in a variety of interior rooms, interacting with interior space in a variety of activities. Mannequin families that did not adhere to FDCA guidelines appeared in the

resultant photographs in a jumble of parts amid the chaos of a messy home (Figure 47.1). Going further, the FDCA created a film titled *The House in the Middle*, in which the very homes these mannequin families lived in were put on nuclear trial. The three houses were filmed as a nuclear bomb test was carried out in the nearby desert (Figure 47.2). The house in the middle survived the blast (or was the least damaged). The houses *not* in the middle were shown to be unmodern and ill-kept by their occupants, positing that a modern (and neatly kept) home with modernized infrastructure could save lives.[7] The official government policy on the Cold War was clear: your home and how you live matters. Modern living was officially drafted as patriotism.

Figure 47.1 In Operation Doorstep, a family of mannequins helps to demonstrate how some behaviors and housekeeping practices contributed to civil defense and survival rates in the face of an atomic attack. At the top of the photo, dinner party guests do not seek shelter. Below, the party's unpatriotic behavior leaves the scene a shambles. 1953.

Image credit: author

With a decade and a half of exhibition and policy, it is no surprise, then, that the meeting between Soviet Premier Nikita Khrushchev and U.S.

Vice President Richard Nixon that became forever known as the "kitchen debate" became the iconic flashpoint that thrust interior architecture further onto the world stage. Each country represented a large swatch of the world and each evangelized its economic model and political backing of that model as an essential ingredient to the good life. Whether that good life was borne from socialism or capitalism came down to an informal series of comments in the kitchen of a model home. The "kitchen debate" wasn't necessarily planned as a debate at all. The 1959 American National Exhibition in Moscow's Sokolniki Park was another of the design exhibitions that had become an annual showing in countries with a large stake in the Cold War. In this iteration, multiple home interiors, kitchens, and floor plans were shown. In Sokolniki Park's suburban setting, the exterior context was set for a much anticipated six-week extravaganza of cultural exchange. Soviet visitors were ushered into an entrance pavilion with large screens showing the abundant American way of life. Then came 50,000 square feet of floor-to-ceiling consumer goods in what one historian called a "combat of commodities."[8] It was, however, kitchens that dominated the show. One RCA/Whirlpool kitchen was populated by labor-saving technology and push-button ease, including a floor-cleaning robot and little need for the cook to even rise from a chair. Another showcased convenience foods and demonstrations of ready-made cake mixes with representatives from large American food conglomerates. An up-to-date apartment interior provided a rare glimpse into a non-suburban interior. The big finish, however, was an entire prefabricated suburban home bifurcated with a ten-foot aisle through which millions of visitors would pass in a mass consumption of, well, consumption.

Figure 47.2 This film still from *The House in the Middle* is the shameful house (not in the middle) that was ill-kept and unmodernized. The message was clear that a family that did not subscribe to the trappings of modernism and of modern life was an unpatriotic threat to the safety of all. Later in the film, a nuclear test blast set this supposed eyesore on fire whereas the house in the middle, well-kept and modern, survived with minor fire damage. 1954. Produced by the Federal Civil Defense Administration & the National Clean-Up-Paint-Up-Fix-up Bureau. U.S. Archives.

The prefab home with its middle passage was dubbed "Splitnik" in reference to the Soviet satellite Sputnik that had pushed the Soviet Union to the forefront of the space race. The ranch-style home was replete with the American infrastructure that marked the middle class: a dishwasher, a combination freezer and refrigerator, a garbage disposal, and a countertop cooking range. Very little is ever mentioned of the other rooms of "Splitnik"; it is the kitchen that is dissected. It is into this sunny, bright yellow kitchen that Vice President Nixon pulled Premier Khrushchev close and said, "I want to show you this kitchen." The exchange that followed was the climax of interior architecture's role in the Cold War, and was often dubbed a turning point in the Cold War.

The exchange, despite the name history has given it, was hardly a debate. It was a series of remarks, perhaps even a series of barbs and witty rejoinders. It was entirely informal except for the presence of a horde of media and interpreters. Taking place during a brief thaw in the Cold War, the lost-in-translation humor and jibes lend the entire affair an awkward joking air. While no comprehensive transcription exists of all that was said between the two leaders (audio and television cameras did not record every part of the mobile exchange), the discussion of the interiorities of Splitnik and all it entailed was to offer, at several points, strong connections between domestic home infrastructure and world conflict. To a modern scholar, the way in which food and domestic labor was connected to the home's interiors and then to world peace seems surreal. At the time, however, when the food politics of agriculture, airlifts, and post-WWII price control of food and farm commodities were still hot topics, the kitchen was, perhaps, the exact right place to exchange ideas on the interiorities of two rivaling political and economic ways of living and governing.[9]

Khrushchev turned the United States' ban on shipping strategic goods to the Soviet Union into a barb about the United States inability to trade now that it has grown older (and presumably lazier about such things). Khrushchev called for the U.S. to seek some trade "invigoration." Consumer goods and interior amenities were quickly turned into a political gambit. Nixon later tried to compare the two countries' technological advancement, conceding the Soviet domination of the Space Race by saying,

> There may be some instances where you may be ahead of us, for example in the development of the thrust of your rockets for the investigation of outer space; there may be some instances in which we are ahead of you – in color television, for instance.[10]

The almost hilarious comparison of color TV to rocketry hammers home the idea that consumer goods and the home interiorities in which they were couched were viewed as equally important to the cold-warring nations.

Throughout the stilted staccato exchange in the bright yellow prefab kitchen, each leader attempted periodically to steer conversation to lighter topics or more serious topics in turn, depending on how ready or willing they were to speak extemporaneously in a given area. Nixon's invitation to see a typical "California" kitchen (his home state) seemed to hover on the fence of serious. On the surface, Nixon wanted to point out that labor-saving devices (mere "gadgets" according to Khrushchev) had become a standard, built-in facet of the average home's infrastructure. Taking it a step further, Nixon then wanted to highlight the role that these so-called gadgets held in liberating the housewife from home-slavery. Khrushchev wasted no time in refuting that idea and bringing his comments back to a dishwasher-to-dishwasher comparison.

The discussion of gadgetry, then, quickly morphed into an applied example of economic models using the typical home as a starting point. Khrushchev pointed out that "we have such things" when Nixon insisted that the built-in technology was a highlight. Khrushchev pointed out that the Soviet Union did not support a "capitalist view of our women."[11] The subsequent macroeconomics lesson was not about gadgets and comfort, *per se*, but used the home's interiorities as a starting point for a detailed comparison of income, personal choice, quality of life, and consumerism, noting workers' salaries, industrialization, and how all of these facets were different or similar under capitalism and socialism. As the two men leaned over the exhibit rail of a modern kitchen of tomorrow, they were in fact speaking frankly about the actual results of each grandiose economic model and how it would trickle down into the dishwashers and bedrooms of an average family.[12]

This, in short, is the meat of the "kitchen debate." It was never really about consumer goods at all, but instead about the economic systems that governed and manipulated the acquisition of those consumer goods. It also emphasized that the home and its interiorities were at the heart of every discussion about the superiority of either of these systems. In the "kitchen debate," the world finally saw the top leadership of the great nations discussing *their* lives and *their* homes. The idea of the home interior, both as

an abstract achievement of middle class and the tangible ownership of goods and appliances, was instrumental in the waging of the Cold War.

Interior architecture is often touted as an emerging discipline, but in a sense it has been at the forefront of scholarly debates throughout at least the twentieth century. In the early decades of the Cold War, interiorities became the best-used and most often deployed tool for both explaining and waging the Cold War through consumerism and applied economics. Interior architecture, before being recognized as a discrete scholarship, was responsible for the grunt work of winning the hearts and minds of the people in a battle of global politics that affected much of the life we live today. Given the power that interior architecture wields in everyday life, it has been instrumental in familiarizing people with political and economic strategies and in swaying public opinion. In the Cold War, this meant that home infrastructure was the linchpin of whether free-choice capitalism or a more state-controlled home design system resulted in a better quality of life – and a better nation. In the present, interior architecture is still doing the grunt work of familiarizing and swaying opinion through interiorities. Important issues of building reuse, space conservation, and historic preservation are being addressed through a so-called emerging discipline that has been down this road before.

Notes

1 Greg Castillo, *Cold War on the Home Front: The Soft Power of Midcentury Design* (Minneapolis, MN: University of Minnesota Press, 2010), p. 9.

2 Ruth Oldenzeil and Karin Zachmann, *Cold War Kitchen: Americanization, Technology, and European Users* (Cambridge, MA: Mass. Institute of Technology, 2009), p. 38.

3 Castillo, *Cold War on the Home Front*, p. 26.

4 Ibid., p. 61.

5 Laura McEnaney, *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties* (Princeton, NJ: Princeton University Press, 2000), p. 11.

6 Ibid., p. 4, 48.

7 Ibid., p. 85.

8 Stephen J. Whitfield, *The Culture of the Cold War*, 2nd ed. (Baltimore, MD: Johns Hopkins University Press, 1996).

9 The political importance of agriculture and food came to a head just five years later as the Soviet Union's crop productions fell short and the U.S.S.R. was forced to ask permission to buy American grain.

10 "The Two Worlds – a Day Long Debate", *New York Times*, 25 July 1959.

11 Ibid.

12 Throughout the debate, both leaders had occasion to call out the other on exactly what was meant by "average" when speaking of the average family and an average income. Actual numbers were bandied about with several examples, but it can be assumed that the actual figures that each used were slightly blurred in the spirit of propaganda, and each leader seemed to take the other's figures with a grain of salt.

Chapter 48

Public spheres

Hong Kong's interior urbanism

Jonathan D. Solomon

Hong Kong is a city where extreme conditions bring the everyday into sharper focus.[1] It is also a city in which intense artificiality belies the simple divisions between public and private that tend to dominate the politics of the interior. Hong Kong's density, topography, and economy create an urbanism that lacks any of the figure-ground relationships that traditionally bring order to public space in either Western or Eastern tradition: there is no axis, edge, or center. Even the ground itself is elusive: streets, courtyards, and squares are replaced by multilevel walkways connecting shopping malls and transit terminals.[2] The pedestrian networks stretching for kilometers across Hong Kong create an urbanism of continuous "interiority" that does not always correlate to the "indoors." These distinctions are further blurred by the highly manufactured quality of the city's outdoor atmosphere; pungent with smells, heavy with particulate matter, buffered by light and noise, and hemmed in by walls, the "outdoors" is no less a manufactured

environment than the indoors. The city – indoors and out – is a vast and continuous interior.

It is common to find pedestrians streaming through corridors routed through corporate lobbies, above public parks, or under streets (rather than at grade) in order to stay cool and dry. Cooled, dehumidified, perfumed air distinguishes cultural and economic strata that are spatially contiguous and largely indistinct from one another. The full range of human senses are implicated: in Central, a high-end shopping mall branded by Armani is distinguished from an adjacent and connected mall catering to Filipino foreign domestic workers by, among other things, prodigious scents. Just across a footbridge over Chater Road, varying access to natural light affects retail rents at the Landmark Mall. Up the hill along the Central and Midlevels Escalator, a crowd of tourists and Western expatriates gathers on a street of steep steps in much the same way. Cool air is not the only atmosphere generated by the adjacent pubs: the smell of beer, cigarettes, and grilling beef, the sounds of generic rock and roll, English-language chatter, and clinking glasses form a microclimate distinct from the local street market just a block away.

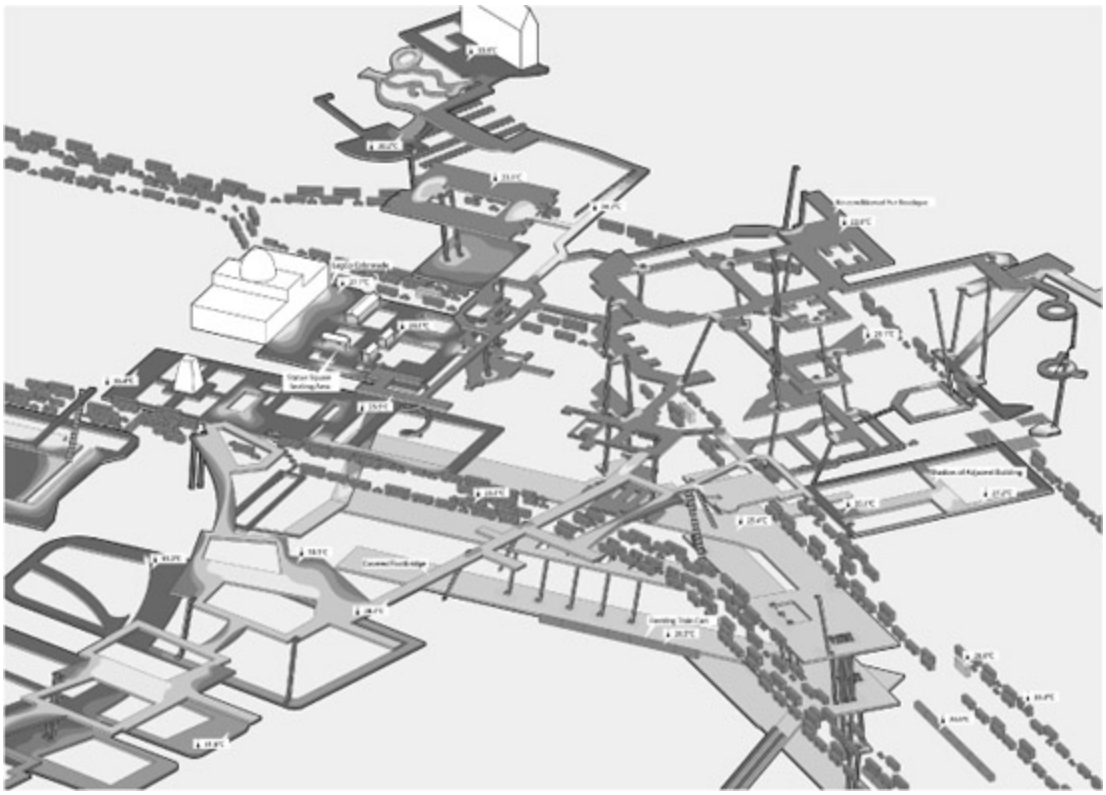

Figure 48.1 *Central Temperatures.* Temperature and humidity gradients define the Public "Spheres of Hong Kong."

Drawing by Adam Frampton, Jonathan D Solomon, and Clara Wong

Interior urbanism is not an urbanism of the indoors, but an urbanism in which indoors and outdoors no longer codify meaningful political or cultural distinctions in the city. In an interior urbanism, all space has equal potential to become part of a public or private sphere based on its occupation. The hierarchies that determine how space is occupied are not based on solids and voids (interiors as spaces hollowed out of objects or buildings as objects placed on a void) but rather by manipulation of atmosphere. The public and private *spheres* are defined by public and private *'spheres*, or atmospheres.

Something in the air

Atmosphere fascinates architects because it creates an alternative to the narrative of building statics. Mark Wigley neatly explores these contradictions in his 1998 article, "The Architecture of Atmosphere."[3] Since the modern period, atmosphere has been portrayed as equal parts powerful and ephemeral, from Reyner Banham's "well-tempered environment" to Sylvia Lavin's "kiss" and Jeff Kipnis's "blush."[4] Atmosphere has become equally alluring to studies of the origins of modern civic space in urbanism and political theory. Conceptual historian David Gissen references the works of architects Pierre Patte and Eugene Henard, engineer Jean-Charles Adolphe Alphand, and civic planner Georges Haussmann, who "ensnared water, gas, trees, stone, and animal and human ablutions into a circulatory vision of an urban streetscape … designed to circulate both nature matter, 'bourgeois' concepts of leisure-nature, and state-capitalist notions of nature" in nineteenth-century Paris, and explores the role of environmental risk in shaping the interior environments of post-war Manhattan.[5] German philosopher Peter Sloterdijk has described the history of artificial atmosphere as beginning with the 1848 Palm House at Kew Gardens, designed by Decimus Turner and engineered by Richard Burton. Heated by coal boilers in its basement that fed water pipes under iron gratings in the floor, the Palm House combined active and passive environmental management to sustain an environment suitable for the keeping of various species of exotic palms, which were being returned to Britain from colonial possessions. To Sloterdijk, the Palm House "marked a clear caesura in the history of building" by recognizing the inherent relationship between organisms and their atmosphere.[6]

There was rich interest in the creation of atmosphere in the practice of both contemporary architecture at the turn of the millennium, much of which embodies both a pursuit of adaptive forms and spatial effects and a critique of static definitions of the public. Olafur Eliasson's 2003 *Weather Project* at the Tate Modern in London manipulated humidity, heat, and light to conflate the boundless experience of the exterior within the enclosed. An Te Liu's 2008 *Cloud* at the 11th Venice Architecture Biennale is

an assembly of air purifiers, ionizers, washers, humidifiers, and ozone air cleaners running continuously. Mason White explained,

> 'Cloud' is read as a machined equivalent of an actual cloud abstracted into its components of moisture processing, air exchanges, and atmospheric densities and imagines the potential, as with snow-making machines, of generating entire weather conditions at will … its own bubble of processed air dissipating into the larger space, an invisible zone of purity shape-shifting with the interior microclimates.[7]

Diller+Scoffidio described their 2002 Blur Building on Lake Neuchatel, Switzerland, more simply as "an architecture of atmosphere."[8] Utilizing water as a building material, 31,500 high-pressure mist nozzles emit fog generated from the water of the lake below. The Dutch Pavilion at Expo 2000 in Hannover actualizes what Sloterdijk refers to as "an operational unit of the sprawling triad of space station, greenhouse, and Human Island." He describes, "A hybrid form between botanic garden and large residence, this brilliantly bizarre building, a kind of vertical plant tower, offers a contemporary comment on an expanding definition of dwelling spaces of biotopic diversity under conditions of high urban density."[9]

A review of projects collected by Zoe Ryan for the 2006 exhibition *The Good Life* at the Van Alen Institute in New York reveals a particular fascination with the adaptability of atmosphere to structure the public realm outdoors. Rebar's (PARK)ing (2005) converts San Francisco parking spaces into urban parks using sod and potted plants; Greyworld's public art projects in the UK, Ireland, France, and Germany (1996–2005) convert street furniture and guard railings into musical instruments; Takano Landscape Planning Company's Takachi Ecology Park in Obihiro City, Japan (2006), includes inflatable domes to simulate weightlessness and a "fog and water environment that changes constantly depending on the weather conditions"; temporary urban beaches convert highways to recreational spaces in Paris, Amsterdam, Brussels, and Rome.[10,11]

If atmosphere has the same implications on social order as space, then interiority is not a disciplinary or spatial distinction, but a theoretical framework for understanding social order. Hong Kong's urbanism is a spectacular test of this application.

Politics of the public 'sphere

Politics are practiced in the public 'sphere in Hong Kong in part because the city has so few traditional spaces of state power as understood in either the Eastern or the Western canon. Like so much else in Hong Kong, density exacerbates interiority.

Colonial Hong Kong was spread along the steep shores of Hong Kong Island. Land was so sparse that the British Navy's headquarters was originally housed aboard a ship, the HMS *Tamar*, which docked at the foot of Victoria Peak. Through successive reclamation projects, the colony grew into the City of Victoria and began to build institutions and public spaces including City Hall and Royal Square, later known as Statue Square after the statue of Queen Victoria unveiled there in 1896. City Hall was replaced by the Hong Kong and Shanghai Bank in 1933, and is presently the site of the HSBC Main Building, completed in 1985. On a perpendicular axis with Statue Square was the High Court Building, built in 1912 by Sir Aston Webb and Ingress Bell; the two-story neoclassical granite building features an ionic colonnade and dome surmounted by a replica of the statue of Themis atop Old Bailey in London. Vacated by the Court in 1980, in 1985 it became the home of the City's Legislative Council (LegCo), the parliamentary body charged with city administration since 1843. Originally appointed, and later directly elected, LegCo continues to function under the Basic Law since the 1997 handover to China.

In 2011, LegCo vacated the High Court Building for a new complex on a parcel of land recently reclaimed from the harbor on a site named for the HMS *Tamar*. Where the older building had the trappings of a Western seat of government (dome, colonnade) as well as its provenance, the new complex resembles a suburban office park or a luxury hotel. Designed

by Hong Kong Architect Rocco Yim, the building is composed of two tower blocks bridged by a slightly skewed horizontal cap. The effect, described as a gateway by the architect and as representing the transparency of government by LegCo, is undermined by the thicket of towers immediately behind it and by its general surface opacity. These ambitions are better exemplified in its podium, or multistory base, which slopes toward the harbor with a widening lawn and connects via footbridges back over Harcourt Road to the city's pedestrian network beyond it. The journey from LegCo through this network to Hong Kong Park, a formal garden on a terrace less than a kilometer away, is a walk up and down stairs and escalators, through the air conditioned atria of shopping mall interiors, the narrow corridors of tower block lobbies and arcades, and the liminal spaces of urban convenience, such as the catwalks beside public transit interchanges or parking garages. These are not spaces that are traditionally associated with the presence of the state or its overthrow. Comprising an interior urbanism, they are, however, potential spaces for political action. In a city in which formal urban spaces do not embody narratives, their occupation tends to do so instead.

The HSBC Main Building sits adjacent to one of the last remaining colonial public spaces in Hong Kong: Statue Square. Both the square and the building, with its open ground plan below suspended banking halls, are host on Sundays to foreign domestic workers gathering on their government-mandated day off. David Howes uses this space, and the larger weekend occupation of footbridges outside of shopping malls, as an example of the influence of atmosphere on the city's public 'sphere. Referring to the work of urban ethnographer Lisa Law, he describes how the sounds and scents of the foreign workers, mostly Filipino, establish temporary cultural boundaries between their "Little Manila" and the financial center:

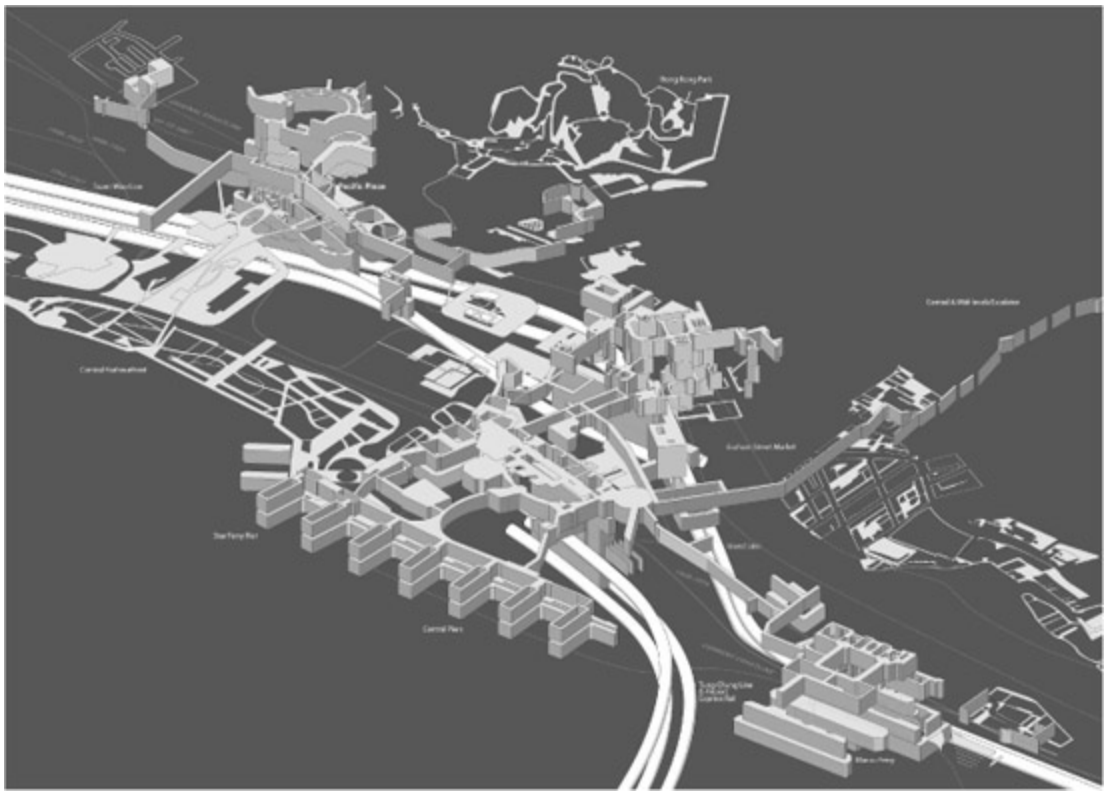

Figure 48.2 *Massing.* The continuous interiors of Hong Kong's pedestrian network represented as a solid figure.

Drawing by Adam Frampton, Jonathan D Solomon, and Clara Wong

> This conflict within Hong Kong society over the sensuous (re)construction of space by the migrant workers during their leisure hours testifies to the politics of differing sensory strategies for making sense of the same place, and calls attention to the multicultural tensions embedded in the city's urban fabric.[12]

In September 2011, activists who would form the Occupy Movement demonstrated against income inequality by encamping in Zucotti Park, a public space adjacent to Wall Street, the New York Stock Exchange, and the Federal Reserve in Lower Manhattan. Not long afterwards, on October 15, protesters in Hong Kong opened an encampment on the plaza underneath the atrium of the HSBC Main Building, where they remained for

almost a year until they were forcibly cleared by court bailiffs on August 27, 2012. Like Zucotti Park, a privately owned public space (POPS) controlled by Brookfield Properties, the plaza under the HSBC building has a complex provenance. Owned by the bank but legally designated a public passageway, a judge had ruled the occupation fell outside its intended use.[13] Occupy Hong Kong outlasted the encampment in New York, as well as those in London and Frankfurt. Unlike these other protests, which occurred in sites adjacent to the space of global capital, Occupy Hong Kong overlapped the space of global capital and shared space with the informal occupation by foreign domestic workers that preceded it.

Following Chief Executive CY Leung's adoption of a new primary school curriculum that included content seen by many as apologist for the Communist Party, fifty members of a student activist group called Scholarism occupied the public lawn beneath the LegCo complex. Beginning on August 30, 2012, the number of protesters would group to up to 120,000 by September 7, spilling out over the footbridges, access roads, and other interstitial urban spaces that surround the complex and voicing a message directed as much against the government's unresponsiveness as against the curriculum itself.[14] This protest, which dissipated after the government delayed implementation of the curriculum, presaged a longer, more tumultuous one. Beginning on September 28, 2014, with an attempt by student activists to scale fencing that blocked access to Civic Square (a public courtyard at the entrance to the headquarters) and resulting in turmoil, during which police fired tear gas into the gathering crowds, the so-called Umbrella Movement culminated in a sit-in by tens of thousands of Hong Kongers in Admiralty and other sites throughout the territory. Organized on the ground by numerous organizations, including the student movement Scholarism and the advocacy group Occupy Central with Love and Peace, the Umbrella Movement lacked clear central planning or coordination. Participants communicated directly by smartphone apps and responded to circumstances as they developed. Occupying footbridges and sidewalks, but also major roads, the movement engendered a temporary urbanism of barricades, stages, tents, and other informal structures that

included recycling and trash pickup, supply depots and delivery networks, phone charging stations, medical, religious, educational, and social programing, and more. The Hong Kong Police cleared Admiralty on December 11, 2014.

Figure 48.3 Anti-capitalism protestors encamped in the atrium beneath the HSBC Main Building in Hong Kong (2012)

Image credit: Adam Frampton

Unlike preceding political turmoil from Cairo to Kiev that centered on visible occupations of formal public spaces and streets, in Hong Kong, no street or square holds such a symbolic place at the center of the city's public life. Rather, the city's public sphere persists in small-scale, ad hoc actions, appropriations, and occupations of private, public, and semi-public infrastructure. This is the territory of politics in Hong Kong.

Shifting winds

The public ’spheres of Hong Kong demonstrate a divergence between the “indoors” and the “interior.” As both a space of expertise and a professional practice, interiors have tended to nest within architecture. As a disciplinary framework in the Anthropocene, interiority is expansive and pervasive, and becomes a space within which both architecture and urbanism operate. A general condition applicable to all spaces of public and private life in which atmospheric quality determines occupation and sets the stage for politics, interiority is increasingly the governing paradigm for urbanism in fast-growing cities and privatized suburban campuses alike. Atmosphere itself may be neutral; it is wielded on both sides of Hong Kong’s economic and political divides. The clouds of teargas in Admiralty and the perfumed air of the adjacent Pacific Place shopping mall are both tools for reinforcing the hierarchies of Hong Kong’s political establishment, while the sounds and smells of Howes’s “Little Manila” or the expat bars of Lan Kwai Fong establish another within the city’s culture. While atmosphere may be neutral, the condition of interiority is not. Unlike traditional figure-ground hierarchies in which program and ownership are fixed to spatial configuration, interior urbanism can make public life easier to snuff out, but at the same time allows it to waft. Such an urbanism is at once more rich and more treacherous; more powerful and more volatile. In the architectural utopias imagined by postwar European modernists, the continuous interior was politically liberating and economically equalizing. In Hong Kong, these effects are difficult to find. The territory has the largest wealth inequality in the world and is dominated politically by Beijing. Yet winds shift: the Umbrella Movement spectacularly redrew boundaries that many assumed were stable, but smaller actions regularly achieve the same impacts at a more quotidian scale. Streets become hair salons or workshops, shopping malls host impromptu art classes or musical performances, walkways become restaurants or mahjong parlors. This is all possible because an interior urbanism allows a mutability of hierarchy on a changing wind.

Notes

1 Portions of this paper are adapted from Jonathan D. Solomon, "Public – Spheres: Atmosphere and Adaptable Space in Hong Kong", in *Masterplanning the Adaptive City, Computational Urbanism in the 21st Century*, ed. Tom Verebes (New York: Routledge, 2014), pp. 68–74; and from Jonathan D. Solomon, "Ad Hoc Admiralty", *LEAP* (31 January/February 2015): 54–67.

2 Adam Frampton, Jonathan D. Solomon, and Clara Wong, *Cities Without Ground* (San Francisco, CA: Oro Editions, 2012).

3 Mark Wigley, "The Architecture of Atmosphere", *Daidalos* 68 (1998): 18–27.

4 Reyner Banham, *Architecture of the Well-Tempered Environment* (London: The Architectural Press, 1969); Sylvia Lavin, *Kissing Architecture* (Princeton, NJ: Princeton University Press, 2011); Jeffrey Kipnis, "The Cunning of Cosmetics", *Herzog & de Meuron: El Croquis* 84 (1997).

5 David Gissen, "APE", in *Design Ecologies: Essays on the Nature of Design*, ed. Lisa Tilder and Beth Blostien (New York: Princeton Architectural Press, 2010), pp. 65–66.

6 Peter Sloterdijk, "Atmospheric Politics", in *Space Reader: Heterogeneous Space in Architecture*, ed. Michael Hensel, Christopher Hight, and Achim Menges (London: Wiley, 2009), pp. 173–174.

7 Mason White, "99.7 Per Cent Pure", in *New Material Boundaries, AD Architectural Design*, 79, no. 3 (May/June), ed. Sean Lally (2009): 21–22.

8 "Diller Scofidio + Renfro", http://dsrny.com/ (accessed 7 July 2012).

9 Peter Sloterdijk, "Foam City: About Urban Spatial Multitudes", in *New Geographies, 0* (2009): 136–143.

10 Zoe Ryan, *The Good Life: New Public Spaces for Recreation* (New York: The Van Alen Institute, 2006), p. 29, 31, 56, 61.

11 Peter Sloterdijk, "Spheres Theory: Talking to Myself About the Poetics of Space", *Harvard Design Magazine* 30 (Spring/Summer 2009), pp. 126–137.

12 David Howes, "Architecture and the Senses", in *Sense of the City*, ed. Mirko Zardini (Baden: Lars Mueller Publishers, 2005), pp. 326–327.

13 "Occupy Hong Kong Camp Cleared From HSBC Headquarters", Associated Press in Hong Kong, 2012, http://www.theguardian.com/world/2012/sep/11/occupy-hong-kong-camp-hsbc.

14 Shirley Zhao, "Record-High Turnout for Anti-National Education Protests", *Time Out*, 8 September 2012, http://www.webcitation.org/6AVyS2c6x

Chapter 49

Altered (e)states

Architecture and its interiority

David Erdman

If interiors are merely a category of professional work that occur on the inside of buildings, "interiority" is the state of mind and perception induced by an architectural environment that is inwardly focused. An environment of this nature may have varying "degrees of interiority" but is not limited to whether it is physically within or outside of a building. Interiority, a concept of increasing importance in urban centers today, allows architects to consider how to alter the state of various environments. It opens up a productively disciplinary way to design interiors, while still considering them explicitly architectural.

Interiors are episodic in nature and often designed in vignette-like formats that are understood as autonomous "rooms." Because interiors are disjointed from the exterior, the autonomous design of interiors contradicts five hundred years of architectural theory about part-to-whole relationships – the holy grail of rules driving architecture.[1] In aggregate, these treatises and theories have repeatedly suggested, until the late twentieth century, that

the exterior and interior of architecture need to be integrated and unified into an architectural whole.[2] Consequently, architects have seen the interior as the inside (merely the other side of a building enclosure) instead of seeing its potential interiority.[3]

Young architects and architecture firms are often biased toward an overt preference for "ground-up" work rather than interior-based work, suggesting an obsession with the "architectural whole." This, in turn, perpetuates difficulty for small independent offices in contemporary cities, where much of the work available is interior oriented. Some are compelled to develop an exploratory attitude, prowling the planet to look for new frontiers, such as China, where a gold rush of projects and contexts can situate a larger project. Yet this compulsion to address the whole exhausts resources and capital – and to what end? Is wholeness really the penultimate goal of architecture?

As populations increase, cities become denser, resources diminish, and economies sober, architects will need to confront new methods of space making. One could argue that the "topological city" with its highly continuous, centrifugal qualities (and the economies and politics that drive them) is a rare and dying breed. In the not-so-distant-future, cities will have to consider how to adapt and alter their existing structures to grow inward, to reconfigure their interior, and to design for the discontinuities and temporal layering of their urbanity. These trajectories are already emerging, with competitions and awards increasingly involving adaptive reuse projects. A focus on interiority is an essential conceptual element of the twenty-first-century architect's tool kit because it offers new ways to alter the perceptions of architectural environments within the context of contemporary urban and economic trends.[4] The concept also allows for a nimble practicality where interiors and adaptive reuse projects can fall into the scope and ambitions of experimentally oriented architectural practices. The emergence and increasing prevalence of "alterations and additions" work – often limiting the architect's scope to only the exterior or interior – is the type of work that most contemporary practices must take on if they want to engage the city. This is certainly true for Hong Kong. Recent

projects like Tod Williams/Billie Tsien Architects and Partners' Asia Society Hong Kong Center and Herzog & de Meuron's Police Central Headquarters are among several notable projects in Hong Kong that are more interventionist in nature and comfortable spanning the gamut between ground-up construction, conservation, landscape, and interiors. These projects showcase a largely adaptive/alteration framework in their conception and execution (Figure 49.1).[5]

Unlike most contemporary Asian cities, Hong Kong experienced its growth period more than sixty years ago. It now has a mature and highly dense building fabric and is one of the most expensive regions in the world to build in.[6] In many ways, it is more emblematic of a city of the twenty-first century (built out, episodic, layered, and interiorized) than it is of a late-twentieth-century city that is open, smooth, continuous, and free to grow outward. Hong Kong and other twenty-first-century cities like it amplify the discordances between exterior and interior conditions more so than twentieth-century cities do. The interior and exterior spaces of the twenty-first-century city may be entirely different from and at odds with one another. Driven largely by the desire to minimize risk by involving more than one designer, style, and brand, contemporary practices in development/financing (with its associated project briefs) call for this opposition. These are trends perpetuating environments that are intentionally and architecturally unresolved.[7]

Taken as a psychoanalytical corollary, the perception of a twenty-first-century city's interiority contrasts with the perception of its exteriority. This correlation could equally apply to the psyche of the contemporary urban subject, with their highly mediated and constructed exteriors (think Instagram, Facebook, etc.), that allow for a heightened contrast between their interior and exterior selves. The twenty-first-century city and its inhabitant subjects, it could be said, no longer expect part-to-whole relations to necessarily resolve themselves. If anything, the thirst for urbanity that is driving populations to move into cities (and the way those related architectures are being financed and marketed) could be precisely a desire for this discordant texture of experiences. Learning from Hong Kong, it

could be presumed that the future of the city is one where the topologies of interior and exterior will no longer need to be smoothed out, and where architects will no longer concern themselves with resolving part-to-whole relationships. Instead, design will play a greater role in giving cohesion to experiences that are currently disparate – making new types of wholes – while allowing for the semi-autonomy of interiors and exteriors to coexist.

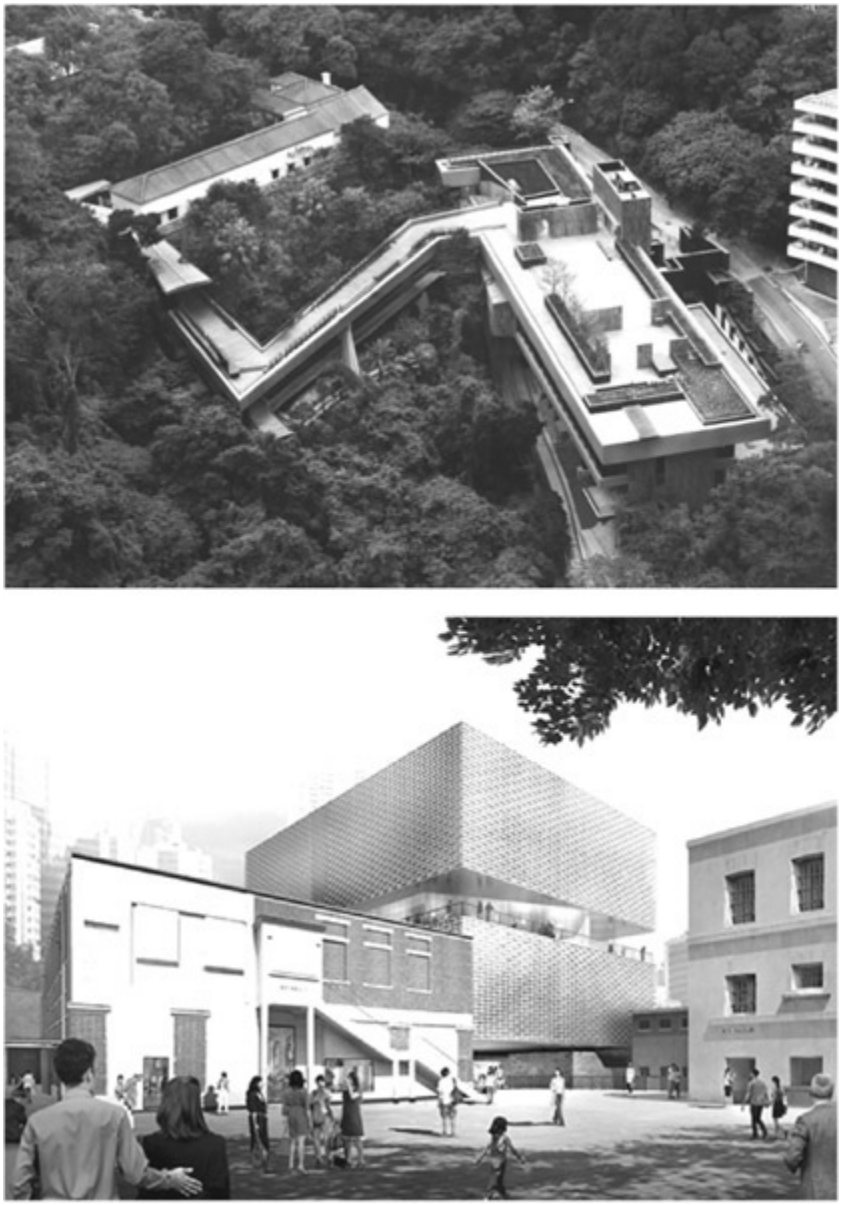

Figure 49.1 Two projects showing the interventionist and interiorized capacities of architecture in contemporary Hong Kong. Both projects are emblematic of projects in dense urban cities where a

multitude of disciplines and approaches are required of the architect. They also (in different ways) articulate larger urban interiorized spaces. Top, Asia Society Hong Kong Center, Admiralty Hong Kong, 2012. Tod Williams Billie Tsien Architects | Partners. Aerial photograph of Asia Society showing new structures and existing renovated structures layered on top of and beside one another. Photo Credit: © Michael Moran/OTTO Bottom, Central Police Station Compound, Central Hong Kong. Under construction. Herzog & de Meuron. Rendering showing one of two "infill" intervention/additions on top of and surrounded by renovated existing structures articulating the corner of the courtyard. View from within the courtyard.

Image credit: © Herzog & de Meuron

Alteration

Mid- to late-twentieth-century obsessions with digital technology often relied on biological models to resolve how architecture could adapt to its changing context. This applies to both the interior and exterior spaces of architecture, from the endlessness of Kiesler to the metabolic capacities of architecture, as seen in Japan.[8] While there have been some notable advances in this subject manifested in a host of formal, parametric, and geometric experiments, it is difficult to ignore the role of adaptation in the profession through ideas of "adaptive reuse." Used more often as a marketing ploy than a conceptual opportunity, adaptation is, however, ripe for theoretical expansion and tectonic interrogation – particularly in relation to ideas of interiority. For the most part, architectural "adaptation" projects are conceived from the ground up, introducing a comprehensive and whole architectural system into a context. The contemporary field of architectural software favors this continuous, smooth, singular, and fully integrated approach. "Alteration," on the other hand, opens up fresh discursive territory that builds upon the ideas of adaptation by affronting standardization – with a few distinctions. It is an approach that is somewhat more restrained, fine grained, and interiorized. Alteration could be called a more "centripetal," rather than "centrifugal," approach to design, one that pulls and tucks architecture into shape, rather than deforms a structure to adjust it to adjacencies.

Because of its episodic characteristics, strategies of alteration are not only in line with the emerging qualities of twenty-first-century cities, but they also open up the potential to reconsider the theories of disjunctive or fragmented architectures prevalent in the 1980s.[9] To a large extent, those theories are absent from digital architecture today due to an obsession with continuity and an intellectually stubborn insistence on designing the whole. From a postdigital perspective, however, disjunctive theories offer a limit for testing. To what extent do alteration and an emphasis on interiority allow us to rethink the architectural whole? Can strategies of alteration be pushed close to the disjunctive extreme of fragmentation while maintaining enough cohesion to be understood as forming new types of architectural wholes? Does alteration allow for a way to engage new ways of thinking that embrace, rather than exile, interiors-based work from architecture?

Objecthood and centripetal qualities

Issues of interiority and the subject of alteration might become central to the work of many contemporary architects. To a large extent, the necessity to engage the subject creatively and theoretically is circumstantial. Increasingly architecture practice takes on projects that are a mixed bag of scope involving one part architecture, one part interior, one part conservation, one part landscape, and one part product design (or some variation thereof). It is equally important to seek out ways to theorize these types of opportunities while also working to understand them within the context of their urban landscapes. The concept of alteration stems directly from these observations in my own experience and practice with davidclovers while I resided and taught in Hong Kong. The distinction between adaptation and alteration has shaped this interrogation in two key ways: through the objecthood of interiority and through its related centripetal qualities. When discussing the architectural whole, we are effectively talking about degrees of "objecthood."[10] Traditionally, architects consider objects as fully integrated entities; interior and exterior, structure and skin, and so on.[11] Where adaptation is about objects adjusting to their

surroundings, alteration is about reconfiguring the object's interior. To what extent that reconfiguration can detach itself from the original object and form new objects, or refashion the original into a new collective object, is where alteration holds its promise. Alteration has both the potential to maintain a degree of objecthood, and yet, in itself, is fragmentary and episodic. Altering is an exercise in adjusting select, disjointed areas – not the entire original object. In the numerous projects I worked on and designed with davidclovers, trends and techniques emerged that led to my understanding that alteration is a critical part of any contemporary practice. In those projects, objects are inserted within objects at some scales, while at other scales a multiplicity of objects (interior and exterior) are instrumentalized to collectively imbue a large-scale degree of objecthood (Figure 49.2). Each technique, I realized, invokes degrees of a perceptual interiority, which is not always manifested through an intervention on the inside.

Hong Kong, as an incredibly dense and pressurized city, has little room to stretch out (partly for financial reasons found in GFA calculations and partly for physical reasons); there simply is not enough space or land.[12] The move toward working with interiorized objects therefore came naturally to the work because of being immersed and practicing in that context. The quality of objects in that context shifted; seeking out ways to pull experience into them rather than showing off their qualities exuberantly up front – or on the exterior. The use of minor and major forms of involutions ranging from subtle, concave facades to deep, thick, figured interiors, was a method of spinning context inward. What I began to understand across these projects is that what distinguishes them are these interiorized objects and their centripetal qualities, a quality that breeds a semi-autonomy reinforcing the episodic and interventionist characteristics between them. In a number of cases where the projects were physically larger, the opportunity to understand how those interiorized objects were both disparate and at the same time form a cohesive landscape; (collective of interiorized objects) became of increasing interest.

Figure 49.2 Left to Right/Top to Bottom: Butterfly House (2014), Office/Hotel Town Center Competition Entry (2012), Barker Rd. Residence (2010), Qianshan New Village Pavilion (under construction), Ruby Court (under construction), Eco Tourist Resort (unbuilt), House DE (2010), Stanley Beach House (2012), Plukka (2014). Various davidclovers projects showing different instances of alteration and centripitality.

Image credit: Almond Chu Photography and courtesy of plusClover

The Repulse Bay Complex

The Repulse Bay Complex, one of the largest projects we designed, exemplifies some of these principles. The Repulse Bay Complex is a wholly owned subsidiary of Hong Kong Shanghai Hotels, who also own and operate the famed Peninsula Hotel in Hong Kong. The original, mid-eighties complex containing four towers of mid- to upscale unfurnished rental units is an Arquitectonica "knock-off," infamous for the gaping hole between the third and fourth tower. Each tower is standardized and homogeneous, surrounded by a series of landscape and club elements that were disconnected architecturally, diminishing the complex's experiential identity.

The renovation was atypical and unique in Hong Kong, among the first comprehensive "gut" renovations of a tower, coupled with a revamping of the podium and complex at large.[13] The project is in many ways a direct reflection of the twenty-first-century characteristics of the city as detailed previously. The maturing building fabric, the sobering economy, and diminishing amounts of land underpinned some of the necessity for the renovation.

The Repulse Bay Complex is a collection of interventions within one site that includes a residential tower, recreational areas, and collective spaces (Figure 49.3). Designed and completed incrementally between 2011 and 2013, the project brief aimed at amplifying the heterogeneity of the tower units while simultaneously imbuing the property at large with a greater sense of cohesion. In the simplest terms, we proposed a series of interventions in the form of a physical alteration of an existing structure. These interventions focused on changes to the common areas of a housing complex that altered the inhabitant's perception of, and interaction with, these spaces. The project illustrates the potential of the disjunctive to produce a new type of spatial fabric that is cohesive yet agile and formed out of a series of disconnected interventions. To this extent, the project is different from an adaptation, which strives ardently for the production of a singular, autonomous whole.

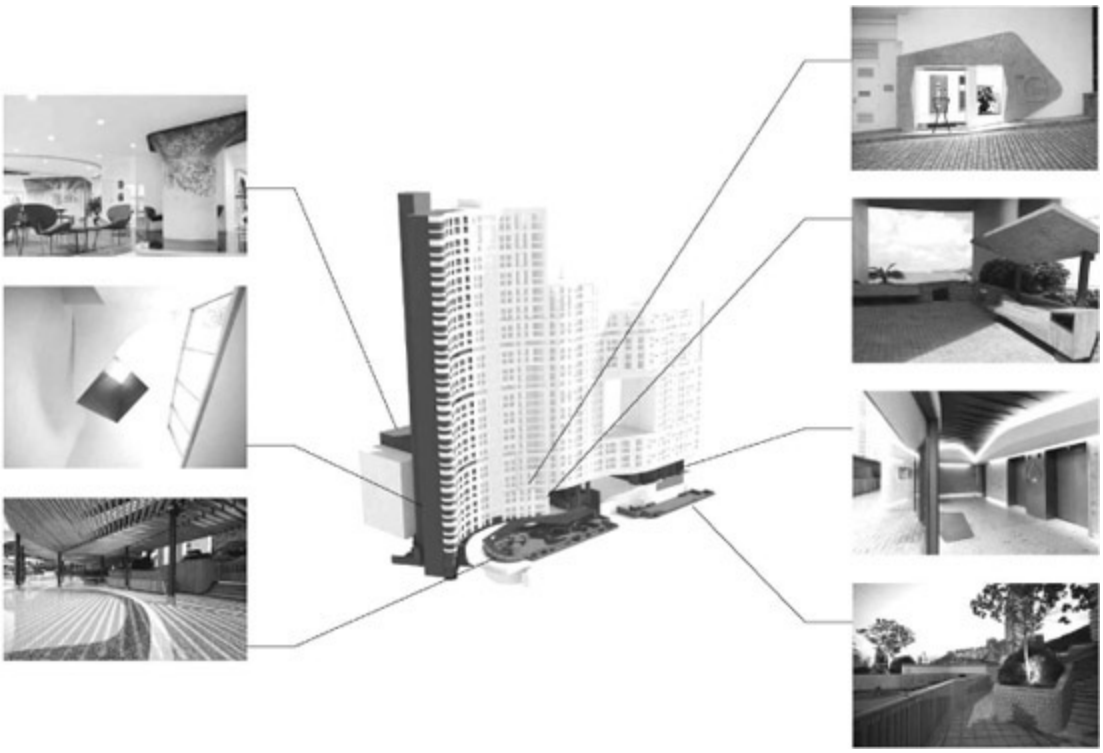

Figure 49.3 The Repulse Bay Complex, Repulse Bay Hong Kong, 2013. Diagram showing the locations and scope of interventions throughout the Repulse Bay Complex.

Image credit: plusClover

While each intervention in the Repulse Bay Complex altered existing structural, mechanical, and visual arrangements significantly, each also has its own discrete limits and could not be conceived a continuous whole. The convergence of technological approaches and the parallel streaming of design techniques in each of the interventions proliferates a high degree of specificity, dexterity, and heterogeneity, while avoiding episodic fragmentation. A composite of technological approaches are deployed, ranging from digitally prefabricated construction to algorithmically generated graphic design and coloring techniques. The designs alter a series of autonomous landscapes, interiors, and architectural objects into a rhythmic texture that appears and disappears throughout the site. Working in this manner developed a finely grained yet open system. Each intervention pulls inward and simultaneously alters existing structures

and relationships. Each intervention is a result of a disciplinary plurality, integrating techniques from product, graphic, and landscape design and further altering the stable "reading" or perception of any single technique. The ensemble of interventions never fully integrates or makes the site whole, yet incrementally they produce enough pressure and tension to tether remote and unconnected experiences to one another.

Speculative realisms

In many ways, alteration is a call to be more resourceful as designers. There is the obvious advantage of recycling an existing building fabric and limiting the resources of development, both of which underscored the opportunities in the Repulse Bay Complex. Alteration may also unleash other types of resources, from the conceptual to the experiential. Learning from the disjunctive theories of the eighties and transforming them in new, innovative ways (including the direct embrace of interiority and its objecthood) allows room to build resources for architecture, and bring into the scope of architecture, work that is in danger of being done by others and/or pejoratively and arrogantly tossed to the side as unworthy of an architect's attention. Architectural practices need to embrace the realities of the cities in which they practice, and at the same time speculate on how to transform them and subsequently to transform our understanding of the architectural whole.

Experimenting with the limits of continuity and fragmentation through alteration allows for a greater degree of compatibility with existing architectural systems, as well as an even greater plurality of experience and effect. The Repulse Bay Complex serves as an interesting testing ground in this context, where diverse material assemblies and moods augment heterogeneity in experiences, while also producing enough cohesion to give the property a new identity. Alteration can be seen as a way to resituate interiority in architecture, highlighting disjunctive capacities of alteration, while ushering postdigital themes relevant to the academy and cultural trends in the industry. If we can employ alteration to rethink the

architectural whole, the future of interiority and its related praxes may open up fertile speculative realities.

Acknowledgement

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Notes

1 *The Interior Architecture Reader* is a case in point, being among the first Readers to focus on the subject of interiors. Mark Taylor and Julieanna Preston, eds., *Intimus: Interior Design Theory Reader* (Wiley, 2006) is perhaps the first and only a few others have been published to date including Lois Weinthal, *Toward a New Interior* (Princeton, NJ: Princeton Architectural Press, 2011).

2 From Vitruvius's "Ten Books on Architecture" (1500s – precise date of publication unknown) to Le Corbusier's *Vers Une Architecture* (Toward a New Architecture – 1923), the architectural whole is reasserted as a primary goal for the beauty, function, and pleasure of architectural design. Arguably, it was not until CIAM 9 (1953) when the Smithsons critiqued Le Corbusier's Athens Charter (1933) and subsequently formed Team 10, that ideas about fragmentary and disjointed cities and architectures emerged. Readers on those theories and architects do not appear until the late twentieth century. Examples are Joan Ockman's *Architecture Culture 1948–68* (Columbia: Columbia Books of Architecture, 1993) and K. Michael Hays's sequel *Architecture Theory Since 1968* (Columbia: MIT, 1998). Each of these expose theories that counter the architectural whole.

3 This observation draws heavily upon Sylvia Lavin's reading of architectural discourse in her book *Kissing Architecture* (Princeton, NJ: Princeton University Press, 2011) and in particular the chapter "Current Kisses", pp. 65–115.

4 See *United Nations Department of Economic and Social Affairs World Urbanization Report – 2014 Revision*, http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf; see also United Nations DESA Development Policy and Analysis Division "World Economic Situation and Prospects" report at www.un.org/en/development/desa/policy/wesp/.

5 See Asia Society Hong Kong Center, Tod Williams Billie Tsien Architects/Partners (2012). This project was incredibly complex in its planning, preservation, conservation, landscaping, and interiors and took over ten years to design and execute. It was the first of its kind in Hong Kong, followed by an onslaught of similar projects like the Police Married Headquarters and Western Market, which reuse obsolete colonial structures (as well as other types of property) to reinvent the cultural landscape of HK. These projects are often federal/private joint ventures of the Build Operate and Transfer typology emerging in Asia. Asia Society HK exemplifies the blurring between various practices and the interventionist nature of design. Technically, it is an addition to an existing property. The Central Police Station Compound, Central Hong Kong (under construction) incorporating two additions by Herzog & de Meuron has a similar sociopolitical and economic structure and resolves itself in an architecture of episodic interventions.

6 Hong Kong's population increase occurred from 1931 to 1961, roughly forty to fifty years earlier than cities like Shenzhen, Beijing, or Shanghai (Sources Figure 01, Wendell Cox "The Evolving Urban Form: Hong Kong", New Geography, 2012, www.newgeography.com/content/002708-the-evolving-urban-form-hong-kong. See also Figure 03, Wendell Cox "Pakistan: Where the New Population Bomb is Exploding", New Geography, 2012, www.newgeography.com/content/002940-pakistan-where-population-bomb-exploding), making it among the most mature modern cities in China. It is the third densest region in the world (Source UN Demographia – "Population Density" chart) and the most expensive city to build in (Sources EC Harris and Langdon & Seah 2013, International Cost Comparison chart ranking the average of the cost of construction).

7 This practice is common even among the top developers in Hong Kong, like Swire or Hong Kong Shanghai Hotels – both of whom are distinguished by their devotion to design and who have worked with notable architects and interior designers such as Frank Gehry, Kengo Kuma, and Peter Marino. Tenders are increasingly broken up in this manner, which is in part a democratic effort to spread the wealth to the design community (and not bias any one practice), evident also in recent Urban Renewal Authority projects in Hong Kong. This practice is also in part a method to capitalize opportunistically on a spectrum of markets and styles within any one property. This is most prevalent in private residential housing estates. The Pacific Century Premium Development's Bel-Air On The Peak development in Pok Fu Lam is an example, which shifts from faux neo baroque interiors (phase four) to the sleek curvilinear modernity of Norman Fosters' 8 towers that form phase six (branded separately as Bel-Air No.8).

8 See Friedrick Kiesler's Endless House project (1950) and the Nakagin Capsule Tower by Kisho Kurokawa (1972), both of which can be seen as benchmark projects using the subject of biological adaptation to underpin their form, geometry, and massing.

9 In particular here I am referring to Deconstruction (see the exhibition of this title at MOMA 1988), its predecessors like Aldo Rossi's seminal book *Architecture and the City* (Institute for Architecture and Urban Studies and MIT, 1982) and perhaps most importantly its antecedents like Bernard Tschumi's book *Architecture and Disjunction* (MIT Press 1996). Largely formed in a predigital era, the projects associated with these theories were explosive fields of objects that were syntactically related but conceived as separate autonomous follies. With the advent of digital computing, continuity and wholism became increasingly important; think single-surface Yokohama Port Terminal (FOA 2002) among numerous other projects. The benefit of looking back at this work after twenty years of smooth and continuous digital projects is to embrace the agility of the fragment and the disjunctive while trying at the same time to explore how those interventions do not remain entirely separate follies but instead form new types of more complex architectural wholes.

10 I am specifically drawing upon Michael Fried's article "Art and Objecthood" (*Art Forum* 5, June 1967) as a means to understand the architectural object. Of particular importance is that Fried's definition of objecthood is distinguishable from the current interest in Speculative Realism and Object Oriented Ontology. This is because Fried's article discusses objecthood as a predominately perceptual and sensual idea within the practices and aesthetics of art – something more directly aligned to architecture and its potential praxes when compared with Graham Harmon's Triple O, Meillasoux, and philosophical discussions of Kant's object of knowledge. While Fried has a direct relationship to Harmon's work, Fried's discussion of objecthood is explicitly more experiential and architectural.

11 Ockman, *Architecture Culture 1948–68*; Hays *Architecture Theory Since 1968*. See endnote 2.

12 Ground Floor Area (GFA) calculations limit the economy of buildings in Hong Kong, which tend to prioritize the monetization of floor plate areas over design. As such, one sees an intensively Fordist production of housing throughout the city and over many decades limiting the extent to which architects can "branch out."

While Hong Kong occupies only one-third of its total land area, the remaining two-thirds are seen as both an asset and economically unfeasible to develop. These areas provide the city with a robust network of country parks and recreation which are difficult to develop due to their intensively steep terrain. Ongoing debates about whether to release this land for development

continue; however, they are unlikely to resolve themselves in a sea change of land releases, reasserting the idea that Hong Kong has very little land to build upon.

13 While de Ricou Tower is among the first A+A projects of this nature, it appears that these types of projects are becoming more common in Hong Kong as evidenced by Pacific Place with its commissioned interventions by Thomas Heatherwick (2011) or several recladding projects undertaken by developers since the 1980s.

Part ten

Epilogue

Chapter 50

Why this, why now? The case for interior architecture

Gregory Marinic

The Interior Architecture Theory Reader offered its authors the opportunity not only to define the field of interior architecture, but also to explore and critique the margins between architecture and interior design. As a rising discipline that lives at the periphery, interior architecture represents an incremental maturation process motivated by intersectional inquiries surrounding spatiality. For interior design, interior architecture embodies an ongoing migration toward complexity, while for architecture, it seeks a deeper analysis of the interior parameters of building design. Interior architecture challenges the conventions of both disciplines and creates a new space of inquiry to provoke transformational change.

In practice, new capacities have significantly altered the means and methods of designing the built environment. As evidenced herein, emerging understandings of interior architecture view its discourse as breaking down boundaries and distinctions between the historically siloed – and generally contentious – territories of architecture and interior design. This blurring, in turn, has restructured how we work and how design

services are delivered, as well as how designers, clients, and fabricators collaborate. Furthermore, the agency of interior architecture loops back into the academy to challenge how we *teach* the next generation a broader knowledge base which supports higher levels of expertise in spatial design. From a pedagogical standpoint, innovative forms of teaching and scholarship in interior architecture endeavor to reform the longstanding biases of both architecture and interior design. Expanded engagement with adaptive reuse, historic preservation, resource remobilization, ecology, digital fabrication, and speculation has generated rich streams of research in interior architecture programs worldwide. This global new wave has begun to gain considerable momentum and prosper.

As a conceptual and methodological design philosophy, interior architecture fosters new potential for spatial networks, fields, systems, and gradients to be investigated, represented, constructed, and deployed. This mining of an interstitial zone between architecture and interior design has made some members of the established disciplines grow skeptical of the intentions and motivations of interior architecture. Yet the strength of interior architecture, in fact, rests in its current marginalization by both architecture and interior design. It is unfortunate that architects and interior designers often reject the binding potentialities which interior architecture offers to their shared, building-oriented field. In light of this, interior architecture is often viewed by conservative architects and interior designers through a lens of "otherness" representing an alternative, controversial, and resented form of practice. Advocates of interior architecture often confront pointed questions which seem defensive rather than constructive and inclusive. What are the specificities of this discipline? Who does it represent? Who is welcome to participate in its development, refinement, and stewardship?

Unlike architecture, in its desire for hegemony, or interior design, in its pursuit of autonomy, interior architecture offers a more malleable way to navigate contingent conditions via adaptive practices that acknowledge imperfection and temporality. Confronting deeply held expectations for interiors, the discipline gives resistance to normative practices by casting a

lens on overlooked opportunities for spatial design. When considered as a whole, the work contained in this book forecasts the future of interior architecture as a heterogeneous ecology of distinct attitudes and expertise. As an expansive field rather than a reductive discipline, it suggests how we can pursue specialized scholarship and practice in interiors ranging from domesticity to urbanity.

In closing, my personal belief in the limitless potential of interior architecture rests in its current marginalization. Interior architecture represents not simply a shift in nomenclature, but a unique approach and critique of the historically iconoclastic, purist, and paradigm-oriented tendencies of architecture, while simultaneously challenging the assumptions and underinvestigated boundaries of interior design. The more nuanced form of logic found in interior architecture—animated by its capacity to collect, collage, clarify, and reveal—renders disciplinary contradictions somehow compatible. This innovative, insightful, and enlightened discipline thrives at the periphery.

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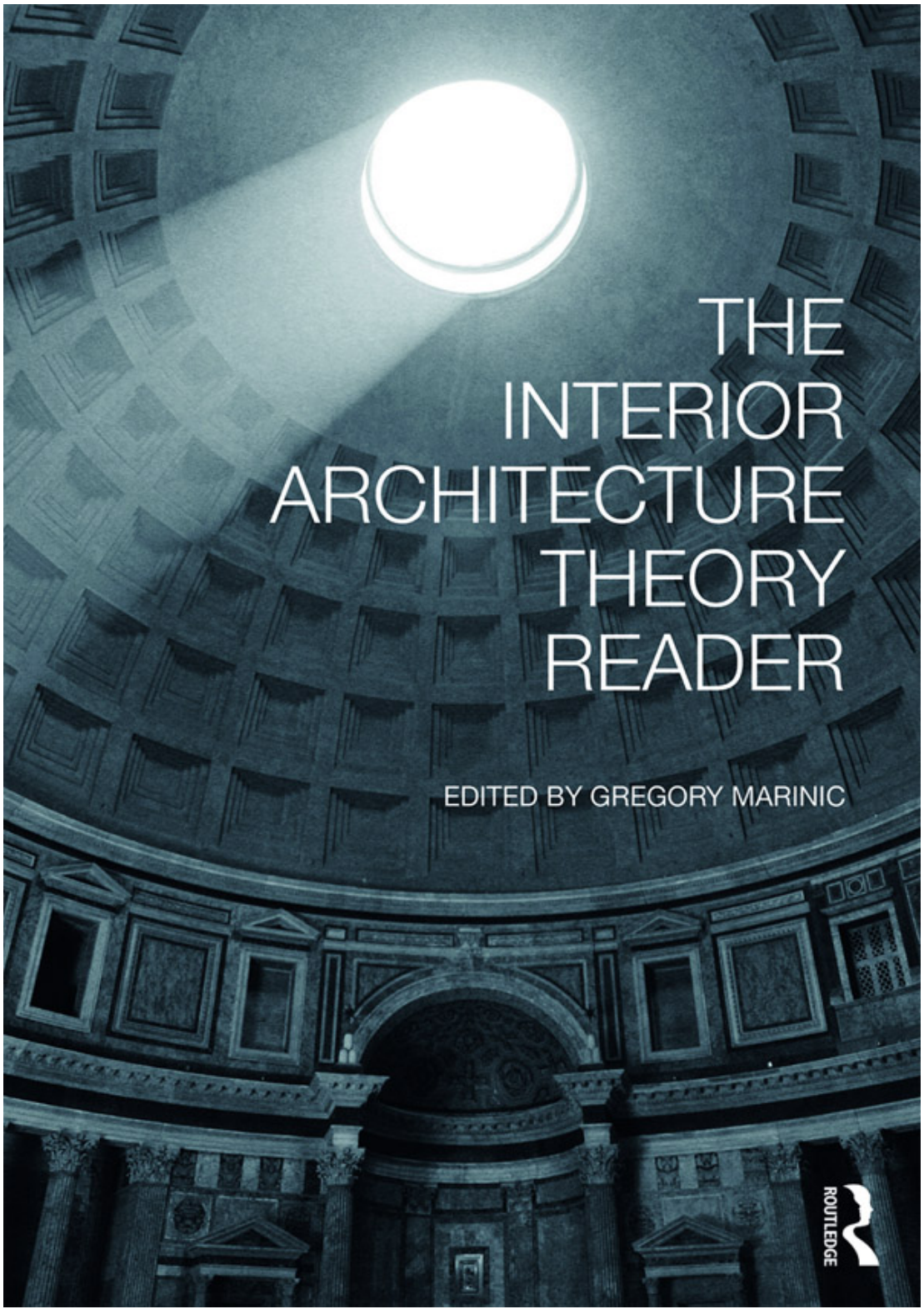
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